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ABSTRACT

To identify the critical problems of state directors of vocational education and the information sources utilized by them, data were collected by mail questionnaire and a series of telephone interviews with a stratified random sample of 15 state directors. Analysis of the data with respect to major problems, methods used to seek information, sources used to provide information, and criteria for information source utilization revealed that: (1) Major problems related to finance and administrative leadership, particularly program planning, staff, administrative organization, and decision-making, (2) Few problems related to teachers, instruction, or social issues, (3) State directors were more likely to seek information through personal contacts than by searching literature, (4) Information agencies were seldom used, (5) The preferred source of information was raw or treated data followed by expert opinion, (6) Reports and pamphlets were utilized almost to the exclusion of bibliographies, books, guides, indexes, and periodicals, and (7) Printed materials were generally selected because of the type and/or form of the information. Recommendations are included and areas of further research are identified. (SB)

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Research and Development Series No. 83

Information Needs of State Directors of Vocational Education

VT 019 096

THE CENTER FOR VOCATIONAL
AND TECHNICAL EDUCATION

THE OHIO STATE UNIVERSITY
1960 Kenny Rd., Columbus, Ohio 43210

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The Center's mission is to strengthen the capacity of state educational systems to provide effective occupational education programs consistent with individual needs and manpower requirements by:

- Conducting research and development to fill voids in existing knowledge and to develop methods for applying knowledge
- Programmatic focus on state leadership development, vocational teacher education, curriculum, and vocational choice and adjustment
- Stimulating and strengthening the capacity of other agencies and institutions to create durable solutions to significant problems
- Providing a national information storage, retrieval, and dissemination system for vocational and technical education through the affiliated ERIC Clearinghouse

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RESEARCH AND DEVELOPMENT
SERIES NO. 83

INFORMATION NEEDS OF STATE DIRECTORS OF VOCATIONAL EDUCATION

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The Center for Vocational and Technical Education
The Ohio State University
1960 Kenny Road
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March 1973

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FOREWORD

State directors of vocational and technical education hold key decision-making roles in state organizational structures, often acting as determinants of information diffusion and adoption. Knowledge of the information needs of state directors should provide a basis for improvement of information services and products. Such knowledge should also provide sound input for problem-oriented research, development, and diffusion activities, thereby resulting in more effective linkage of research and practice.

Information was needed to resolve nearly ninety percent of the problems identified by the state directors participating in this study. More than eighty percent of the problems related to the major categories of administrative leadership, finance, and educational change.

Appreciation is expressed to the project staff for their contributions to this study: J. David McCracken, director; Ann Belland, technical assistant; and Wilma B. Gillespie, graduate research associate.

Special recognition is also due the reviewers for their efforts in critiquing the publication: Carl F. Lamar, assistant superintendent for vocational education, State Department of Education, Frankfort, Kentucky; Glenn White, director of research coordinating unit, State Department of Education, Jefferson City, Missouri; Cecil H. Johnson, research and development specialist, The Center; and N. L. McCaslin, research and development specialist, The Center.

Robert E. Taylor
Director
The Center for Vocational
and Technical Education

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INFORMATION NEEDS OF STATE DIRECTORS OF VOCATIONAL EDUCATION

Chapter One

THE PROBLEM AND ITS SETTING

Introduction

Advisory and legislative groups have called for extension, expansion, and improvement in vocational education because of such social problems as poverty, urbanization, slums, population growth, juvenile delinquency, and ethnic relationships and because of disproportionate unemployment in the young and nonwhite portion of the population. However, change must not only occur in reaction to societal pressures, but must also be a logical outcome of systematic, controlled, empirical, and critical investigation.

The Center for Vocational and Technical Education engages in programmatic research, development, and diffusion activities to strengthen the capacity of state education systems to provide effective occupational education programs consistent with individual needs and manpower requirements. Problem resolution through research, development, and diffusion is enhanced by the affiliated ERIC Clearinghouse that provides a national information storage, retrieval, and dissemination system for vocational and technical education.

Utilization of the growing bank of knowledge in effecting change is dependent upon increased communication between research specialists and practitioners. Plans for improving the process of educational change normally include linkages to increase the flow of information from design to implementation. Decisions based upon sound information should supplement reliance upon perceptions.

Definition of the Problem

Research findings are not being incorporated into the mainstream of operating programs soon enough nor in sufficient quantity. Information that is available often fails to reach key decision-makers in the form and in time to assist in decision-making.

Research, development, diffusion, and information dissemination activities should relate to real problems of key personnel in vocational and technical education. The chief administrative

officer for vocational and technical education in state departments of education is the state director of vocational and technical education. Little is known about major problems for which state directors of vocational and technical education need information, methods used by these decision-makers in seeking information, information sources normally used, or the criteria employed in selecting information.

Need for the Study

Knowledge of the information needs of state directors of vocational and technical education should provide a basis for improving information services and products and sound input for problem-oriented research, development, and diffusion activities, thereby resulting in a more effective linkage of research and practice. This study was a continuation and extension of previous studies related to information dissemination and diffusion in vocational and technical education. These previous inquiries reflected the need for studies that would identify administrative problems, substantive information needs attendant to decision-making, and the methods, sources, and criteria used in decision-making. Application of resulting conclusions should result in improvement of information sources and services for those who administer state programs in vocational and technical education.

Increasingly, authors of case studies, technical guides, and theory-oriented reports have reported research findings on the successful diffusion of new instructional programs and their local adoption. These reports might be classified into four categories: (1) case-studies of educational innovation diffusion, (2) theory-oriented studies that draw upon particular instances of educational innovation to determine factors that influence successful diffusion and adoption of innovative programs, (3) studies that focus on particular school personnel as determinants of program diffusion and adoption, and (4) reports that define local, state, and national communication networks as agents of adoption and diffusion.[1]

Possible objectives for studying information needs and uses are: (1) explanation of observed phenomena of expressed need or information use, (2) prediction of instances of information use, and (3) improvement of the utilization of information through manipulation of essential conditions. The achievement of these objectives must be preceded by certain creative activities: description of observed information use, definition of convenient

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[1]Phillip K. Piele, "Review of Recent Literature on Educational Diffusion" (Paper commissioned by the National Federation for the Improvement of Rural Education in cooperation with ERIC Clearinghouse on Rural and Small Schools, October, 1970).

and appropriate concepts for describing and dealing with information use, and theorizing of causal or quantitative relationships between information use and associated factors.[2] Elements of all of these activities have been evident at different times in studies of information needs and uses that have appeared in the literature with increasing frequency since about 1963.[3]

Inquiries relating to the need for this study are discussed in three general sections: Information Dissemination and Diffusion will cover publications that report data on efforts to determine dissemination; General Users Studies will report on techniques for observing or detecting information users and their needs; and studies on the determination of actual information needs and sources of information of selected target audiences will be reported in Programmatic Efforts. The final section will summarize the need for the present study.

Information Dissemination and Diffusion

Researchers have viewed the process of information flow from determination of the need for a study to adoption of research and development findings. Alternative information sources needed for decision-making and problem-solving to effect educational change within organizational structures have been reported.

Several years ago Cuadra asked what was meant by "satisfying information need," and the obscurity of this expression has been pointed out by O'Connor.[4] Some people equate it with "relevance," although disagreements about relevance are common both in practice and in theory. Other people seem to believe that they are freeing the notion of relevance from obscurities and errors by explicating it in terms of satisfying information need. Basic to the phrase is the perception of the problem and the resultant request negotiation by the user and his value judgments on relevance decisions about the extent to which his "need" was met.[5]

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[2]Ben-Ami Lipetz, "Information Needs and Uses," in *Annual Review of Information Science and Technology*, ed. Carlos A. Cuadra (Chicago: Encyclopedia Britannica, 1970), Vol. V, p. 3.

[3]William J. Paisley, "Information Needs and Uses," in *Annual Review of Information Science and Technology*, ed. Carlos A. Cuadra (Chicago: Encyclopedia Britannica, 1968), Vol. III, pp. 1-30.

[4]J. O'Connor, "Retrieval of Answer-Providing Documents," in *American Documentation*, Vol. XIX, No. 4, pp. 381-386.

[5]*Ibid.*

Persons with information needs are faced with the problem of determining which potential sources of need satisfaction will be accessed and what priorities will be attached to the accession. Problem-solving may require one or several sources of information. For any given information need, the user must identify one or more sources that could be approached for need satisfaction. Once alternative sources have been identified, some expectations or measures of attractiveness relative to specific sources and information needs are established.[6]

When a question arises in the course of a vocational educator's work, he may try to secure an answer to it by thinking about it, experimenting, talking with a colleague, or reading. If he attempts to do the last but does not know which document to read, he may use a document retrieval system. In such a case he will try to retrieve one or more documents from which he can arrive at an answer(s) to his question. These documents may be answer-providing[7] in the sense that the user may (1) be able to infer an answer to his question from the document or a statement that he judges will help move him toward an answer, (2) be stimulated to think through or remember a statement that encourages or challenged him, or (3) alternatively shift the focus of the question to something else. These actions suggest the need for diversity in information services.

The utilization of research is increased when research findings are made available to target groups. Downie and Luke[8] tested the hypothesis that the pay-off from an agency's investment in research could be increased by systematically identifying and describing technological barriers and selectively disseminating them to knowledgeable scientists as "knowledge want-ads." The prime function of the problem resume in this instance was to establish direct person-to-person contact between the individual or organization with the problem and scientists (who were the sources of knowledge for its solution).

Baker, *et al.* collected data on about 300 ideas created in a divisional laboratory of a major U.S. corporation. Data analysis suggested that two pieces of information were required before an idea was generated: (1) knowledge of a need, problem, or opportunity relevant to the company; and (2) knowledge of a means or

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[6]Norman R. Baker, "Optimal User Search Sequences and Implications for Information Systems Operation," in *American Documentation*, Vol. XX, No. 3, July 1969, pp. 203-211.

[7]*Ibid.*, pp. 381-386.

[8]Currie S. Downie and Ernest P. Luke, *Aerospace Research, United States Air Force* (Arlington: Office of Aerospace Research, June 1968).

technique for satisfying the need, solving the problem, or capitalizing on the opportunity.[9]

The potential user of information who is himself a member of a group or organization will be affected by research findings, their acceptance or rejection, and by the administrative hierarchy. Six factors that appeared to influence the utilization of HumRRO research findings by the U.S. Army and nine factors that appeared to cause rejection of research have been identified. Factors influencing utilization were: (1) timeliness, (2) common interest, (3) product engineering, (4) concreteness, (5) acceptance by others, and (6) personal interest. Factors influencing rejection were: (1) poor communication, (2) lack of timeliness, (3) being too drastic, (4) lack of strong support, (5) cost, (6) lack of engineering capability, (7) policy problems, (8) insufficient "salesmanship," and (9) "sacred cow."[10]

The features of an organization have been examined in order to understand the organization and the way it affects information flow.[11] The basic premise was that a typical organization fosters two opposing conditions: (1) stability and orderliness in order to protect the functioning and internal relationships, and (2) stimulation of creativity and innovation in order to keep up with the myriad of changes that affect it.

Organizational structure, then, has an effect on the flow of dissemination. Other barriers to communication and dissemination have been identified. Lippett suggested a model for adequate dissemination of research findings that takes into consideration four major barriers to effective communications: (1) diffusion of labor into task goals; (2) institutional distinctions; (3) development of professional reference groups; and (4) geographical divisions, solution-linking systems and roles, specialized communication

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[9]Norman R. Baker, J. Siegman, and Albert H. Rubenstein, "The Effects of Perceived Needs and Means of the Generation of Ideas for Industrial Research and Development Projects," in *I.E.E.E. Transactions on Engineering Management*, Vol. EM-14, No. 4, December 1967, pp. 156-163.

[10]J. D. Lyons, "Factors Influencing Utilization of Research Findings in Institutional Change" (Paper presented at a symposium at the convention of Southeastern Psychological Association, New Orleans, Louisiana, March 1966).

[11]Mark A. Frohman, *The Impact of the Characteristics of the Organization on Information Flow* (Ann Arbor: Michigan University, 1969).

media, and the development of new systems that enable researchers and practitioners to be part of the same organization.[12]

Information needs may be related to problem-solving and decision-making by administrators who seek to implement change and adopt innovation. Guba, in 1967 attributed the unsatisfactory operation of the diffusion function of the theory-practice continuum to the lack of an acceptable strategy. To remedy this situation, he recommended a four-part strategy with assumptions about the (1) nature of the practitioners who will be exposed to the strategy; (2) state in which one wishes to leave the practitioners; (3) nature of the agency or mechanism carrying out the diffusion activity; and (4) substance of the innovation.[13]

A study[14] of the problems of successfully adopting innovation in the large university determined that the implementation of an innovation may be a function of six basic conditions: (1) the degree to which members of an organization have a clear understanding of an innovation, (2) the extent to which they are capable of behaving in accordance with new role expectations required by the innovation, (3) their willingness to make the necessary effort, (4) the degree to which the required materials and equipment are available, (5) the degree to which organizational arrangements are compatible with the innovation, and (6) the degree to which management carries out its responsibilities in the implementation phase of an innovation.

Successful linkage is achieved when user and resource system interact, collaboratively simulating each others' problem-solving behavior. The need for diversity is stressed through the identification of factors that are highly related to successful dissemination and utilization. These factors have been identified as: linkage to internal and external resources; capability to marshal

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[12]Ronald Lippett, *et al.*, "A Comparative Analysis of the Research Utilization Process" (Excerpts from a symposium at the annual meeting of the American Educational Research Association, Chicago, Illinois, February 18, 1966).

[13]Egon G. Guba, "Development, Diffusion, and Evaluation" (Paper prepared for the conference on Knowledge Production and Utilization in Educational Administration: Role Emergence and Reorganization, co-sponsored by the University of Oregon and the University Council for Educational Administration, Portland, Oregon, October 22-25, 1967).

[14]Everett M. Rogers, "Communication of Innovations in a Complex Institution." *Educational Record*, Vol. XVIX, winter 1968, pp. 67-77.

diverse resources; proximity to resources and other users; and synergy, i.e., the variety, persistence, and synchronization of messages and media.[15]

In a comparative analysis of dissemination and translation roles in education and other fields, three issues were identified concerning the institutional context of the linking role: (1) institutional barriers that affect knowledge dissemination and utilization; (2) institution types that most effectively support and control linking roles; and (3) institution types that serve as linkers.[16]

General User Studies

Before information technologists are able to design effective systems to provide decision-makers with information necessary for their work, a great deal must be learned about the behavior of user populations. Administrators in education seek information to assist in major organizational problem-solving by obtaining substantive information for decision-making from information resources.

Described in a review of studies in the general problem of knowledge production and utilization were three general classes of knowledge linkers (conveyor or carrier, consultant, and trainer), two classes of linkers in resource system (basic scientist and translator or adopter), and five classes of linkers in client systems (opinion-leader, innovator, defender, practitioner, and user).[17] Several divisions of knowledge production and utilization in the curriculum were examined to determine what sort of knowledge the field required, the form it must take to be effectively utilized, and the processes by which the required knowledge was created and put into appropriate form.[18]

Lipetz reported on a study by Menzel who had interpreted the results of several studies of the total information-seeking

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[15]Ronald G. Havelock, *et al.*, *A Comparative Study of the Literature on the Dissemination and Utilization of Scientific Knowledge* (Ann Arbor: Center for Research on Utilization of Scientific Knowledge, Michigan University, July 1969).

[16]Ronald G. Havelock, *Dissemination and Translation Roles in Education and Other Fields: A Comparative Analysis* (Ann Arbor: Institute for Social Research, Michigan University, 1967).

[17]Edmund C. Short, *A Review of Studies on the General Problem of Knowledge Production and Utilization* (A working paper, 1970).

[18]Edmund C. Short, "Knowledge Production and Utilization in the Curriculum" (A paper presented at the annual meeting, AERA, New York, 1971).

activity of scientists and technologists in terms of a complimentary relationship between an extremely flexible and many-sided informal system on the one hand, and a formal communication system, on the other. The formal system was able to compete with the informal information system with respect to only a few of the many information needs of individuals. Among the information needs identified were: (1) promptness of acquisition of certain information; (2) selective direction of communications; (3) screening and evaluation of communications; (4) indications of implications; (5) retention of unscholarly but subtly important details in digests; and (6) rapid feedback.[19]

Programmatic Efforts to Determine Needs

Several efforts have been made to translate research into practice. Some of these have been reported by Allen and Gerstberger, Chorness *et al.*, McCracken, and Magisos. Allen and Gerstberger[20] found a direct relationship between perceived accessibility of information channels and several objective measures of utilization. No definite support was found for the hypothesis that the channels perceived highest in technical quality were those used most frequently. Accessibility influences the choice of sources of information, but the technical quality of the information influences the use.

Chorness, Rittenhouse, and Heald, using a mailed questionnaire to approximately 400 superintendents, specialists, consultants, principals, and teachers in sixty-three San Francisco Bay area school districts, identified the critical decision processes in the field of education and the information sources and kinds of information used to support decision-making and planning. The results indicated that: (1) the most frequently used information sources were colleagues, principals, contacts at professional meetings, superintendents, and curriculum specialists; (2) modes of communication tended to be informal; (3) in twenty-four areas of educational planning, superintendents and principals averaged the highest levels of involvement in decision-making; and (4) lack of time to study problems, excessive focus on financial aspects, need to satisfy money groups, lack of research support, and failure to

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[19]Lipetz, *Op. cit.*, p. 20.

[20]Thomas Allen and Peter G. Gerstberger, *Criteria for Selection of an Information Source* (Cambridge: Alfred P. Sloan School of Management, Massachusetts Institute of Technology, 1967).

define goals were the major stumbling blocks to effective decision-makers.[21]

In a study on the utilization of information by state supervisory and teacher education personnel in vocational and technical education, McCracken[22] sought to identify the: (1) differences between teacher educators and state supervisors in vocational and technical education in their utilization of information; (2) relationships between frequency of literature source selection in solving work-related problems and vocational educators' perceived accessibility, ease of use, and technical content of and degree of experience with literature sources; and (3) major sources of information used by vocational educators in solving work-related problems.

Conclusions from this study were: (1) accessibility appeared to be the dominant factor influencing frequency of literature source utilization; (2) teacher educators and state supervisors normally utilized libraries within the institution and buildings where they worked; (3) teacher educators and state supervisors tended to read interpretations of research to a greater extent than reports of original research; (4) "how to" answers were sought to a greater extent than "why" answers; (5) materials from educational institutions were utilized to a greater extent than materials from commercial sources; (6) teacher educators utilized research-oriented literature to a greater extent than state supervisors, and state supervisors utilized "how to" literature to a greater extent than teacher educators; (7) teacher educators and state supervisors usually conducted their own search for information, and in conducting their own search, they expected to obtain satisfactory information for approximately three-fourths of their current work-related problems; (8) journals and periodicals were utilized to a greater extent by teacher educators and state supervisors in vocational and technical education than any other single professional literature source; (9) the literature sources with which a person was familiar continued to be used in solving current work-related problems; (10) personal sources of information were utilized to a greater extent than literature sources; (11) literature sources rated high in technical content by vocational educators were perceived to be relatively inaccessible; (12) teacher educators and state supervisors tended to utilize literature sources they

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[21]M. H. Chorness, C. H. Rittenhouse, and R. C. Heald, *Use of Resource Material and Decision Processes Associated with Education Innovation: A Literature Survey* (Stanford: Stanford Research Institute, Far West Laboratory for Research and Development, 1969).

[22]John David McCracken, "The Utilization of Information by State Supervisory and Teacher Education Personnel in Vocational and Technical Education" (Unpublished Ph.D. dissertation, The Ohio State University, 1970).

perceived to be easy to use to a greater extent than those that they perceived to be difficult to use; (13) the same general types of literature sources were used by leadership personnel in vocational and technical education, regardless of their major job problems; (14) teacher educators and state supervisors who had problems related to teaching and learning were less likely to conduct satisfactory literature searches than those seeking solution to other types of problems; (15) teacher educators and state supervisors having problems related to research and evaluation were more likely to conduct satisfactory literature searches than those seeking solutions to other types of problems; (16) users tended to use literature sources in the early stages of problem development to a greater extent than in later stages; and (17) a major portion of the variance (R^2 = .97) associated with frequency of literature source utilization in resolving current work-related problems may be accounted for by a knowledge of subjects' perceived accessibility, ease of use, and technical content of, and degree of experience with, the literature sources.

The paucity of reliable information about individuals and groups who use an information dissemination system (an important problem for systems designers) prompted Magisos[23] to conduct a target audience study with the following objectives: (1) description of the organizational level, science field affiliation, and personal educational activities of target audience categories; (2) determination of target audience awareness, use, perception of usefulness and needs for information sources, products and services, especially concerning form, time, and spatial relationships. Research coordination units in seven states that were cooperating with The Center for Vocational and Technical Education at The Ohio State University in a pilot program for the development of state information dissemination systems assisted in the study.

Conclusions were based upon the findings developed by analyzing the responses from the seven target populations: (1) the vast audience of practitioners in vocational and technical education at the local level were in need of better access to information products and services, especially preceding the beginning of school terms; (2) large amounts of time were used by vocational-technical educators in gathering information for their work; (3) many vocational-technical educators were unfamiliar with ERIC, few had received any systematic instruction on its use, and most would be willing to undergo intensive training in its use; (4) sources of information used most were rated lower in adequacy of information

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[23]Joel H. Magisos, *Interpretation of Target Audience Needs in the Design of Information Dissemination Systems for Vocational-Technical Education* (Columbus: The Center for Vocational and Technical Education, The Ohio State University, 1971).

by vocational-technical educators; (5) different forms of information were more useful to vocational-technical educators in different target audience categories; (6) characteristics of information that are important to vocational-technical educators were relevance to the problem, speed of obtaining, currentness, and brevity--although brevity was less important to teacher educators and researchers than authenticity; (7) regularly distributed abstract journals, such as RIE, ARM, and AIM were the most frequently used ERIC information products, but many vocational-technial educators have not used any of the ERIC information products; (8) the ERIC Clearinghouse and the RCU have been distributing ERIC information products widely, especially among administrators, local directors, supervisors, and researchers, but many vocational-technical educators have never received, requested, or had opportunity to use ERIC materials; (9) vocational-technical educators prefer direct, personal contact with familiar and convenient sources of information, but were willing to travel for information needed to solve important problems in their work; (10) some information services were more useful to vocational-technical educators, with differences existing between target audience categories; (11) vocational-technical educators received faster service from most information sources than they expected, but service was much slower than was desirable; (12) few important differences existed between information users in different states; and (13) vocational-technical educators who themselves were enrolled in courses were not significantly different from those not enrolled.

> Two of the recommendations made were: (1) information products should be designed for the intended users, with special attention to the functional role of the target and the intended use for the product; and (2) future studies should focus upon the user's problems and system variations that will satisfy user needs and a variety of methodologies should be used to build upon existent knowledge.

Summary

Research findings are not being incorporated into the mainstream of operating programs soon enough or in sufficient quantity. The information that is available or accessible often fails to reach key decision-makers in vocational and technical education in the form and in time to assist in decision-making. Indication of the critical problems of key decision-makers in vocational and technical education and the information used in their decision-making should provide a sound basis for further development of information dissemination systems.

The growing complexity of society has resulted in increased attention to the problem of knowledge production, dissemination,

and utilization. Federal agencies and private groups are working to develop information dissemination systems. A comprehensive information system should: (1) strive to reflect what is needed rather than supply a "laundry list" of what is available; (2) exist to disseminate information, not to achieve it; (3) through its holdings, reflect user needs, not size of the knowledge base; and (4) reflect diffusion strategies in the dissemination of information.

Concerning the latter, Brickell,[24] in a prepared paper on "Alternative Diffusion Strategies" for the staff of The Center for Vocational and Technical Education, described the characteristics of practitioners, the adoption setting, and the innovations, and he summarized the desirable characteristics and diffusion tactics. One of the diffusion tactics was dissemination of information. About this, Brickell said:

> It is generally believed that while mass distribution of information at a low unit cost is suitable at the early stages of adoption when practitioners are not yet aware that the innovation exists, it must be supplemented by more elaborate, more expensive communication techniques such as personal contact if the prospective adopter is to be moved along from awareness to actual adoption.

User studies in vocational-technical education are needed in order to determine how information services to target groups can be improved. One important target group is the state directors of vocational and technical education. This group holds a key decision-making role in state organizational structures. As state administrators they often act as the determinants of information diffusion and adoption.

Purpose and Objectives of the Study

The purpose of this study was to identify the critical problems of state directors of vocational education and the information sources they utilized. Objectives were formulated to guide sample selection, instrument development, and data collection, analysis, and interpretation. Objectives essential to the conduct of the study were:

1. Identification of critical problems for which little substantive information is available

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[24]Henry M. Brickell, "Alternative Diffusion Strategies" (A paper prepared for the staff at The Center for Vocational and Technical Education, The Ohio State University, August 1971).

2. Description of methods used in seeking information

3. Identification of information sources normally used

4. Identification of criteria employed in selection of information sources

Methodology

Accomplishment of the study objectives required the cooperation, over a thirty-week period, of the state directors of vocational education who participated in the study. In order to collect and analyze the necessary data, it was necessary to determine the population for the study, select a representative sample, develop instruments and procedures for data collection, and determine methods of data analysis.

Population and Sample

The population for the study consisted of the forty-eight state directors of vocational education in the contiguous United States. The state director of vocational education was defined as the chief administrative officer within the state department of education, responsible for administration, planning, and coordination of vocational education programs. Duties of the state director normally include alloting vocational education funds and approving reimbursements, developing financial budgets, maintaining and preparing reports, and directing of the staff responsible for program supervision.

Fifteen states and eight alternate states were selected for the study by a stratified random sampling technique. States were first stratified into four geographic regions using *The U.S. Book of Facts, Statistics, and Information*.[25] A table of random numbers was used to select the sample, by region. The state directors of vocational education agreed to participate prior to their final selection for the study sample.

Instrument Development

A need for a description of individuals and states in the sample and for data necessary to fulfill study objectives served

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[25]U.S. Department of Commerce, *The U.S. Book of Facts, Statistics and Information for 1969* (Washington: Bureau of the Census, U.S. Department of Commerce), 89th Edition, p. xiv.

as the basis for the construction of a telephone interview schedule and mail questionnaire. Instrument items were developed to fulfill the data needs of each objective. A determination was then made as to whether the data could best be obtained through a telephone interview or by mail questionnaire. The items were utilized to formulate a tentative draft of the questionnaire and telephone interview instrument. This draft was field tested by research associates at The Center for Vocational and Technical Education and by personnel in the Ohio State Department of Education, Division of Vocational Education. The group that field tested the instrument was to accomplish several tasks: (1) complete the questionnaire, (2) record the time required, (3) make marginal notes concerning questions not completely understood, (4) list suggestions for improvement of the instrument, and (5) provide verbal answers to an interviewer testing the telephone interview schedule.

A copy of the mail questionnaire is Appendix A. A copy of the telephone interview schedule is Appendix B.

Data Collection

Data were collected by fifteen telephone interviews over a thirty-week period between January and August 1971. The mail questionnaire was also administered during this period of time. Thirteen of the fifteen participants completed the fifteen interviews. One participant completed thirteen interviews and the other participant completed eight interviews. The mail questionnaire was completed by all fifteen participants. A total of 216 telephone interviews were conducted through which 341 major professional problems were identified.

Data Analysis

Study objectives were primarily descriptive in nature. Therefore, data were analyzed by summarizing the information and utilizing descriptive statistics. Two sets of data cards were prepared. One set of data cards represented information in the mail questionnaire with a sample size of fifteen. The other set of data cards contained information on each of the 341 problems identified in telephone interviews. These data cards were tabulated and summarized by computer in tables similar to those in this report. The decision was made to present most of the data for description as frequencies and percentages of group response levels. No data were presented which would have revealed individual states or individuals from those states.

Findings reported in Chapter II are in the form of tabled descriptive information and narrative summary. These summary descriptions lead to conclusions reported in Chapter III. Data were presented to meet each study objective.

Chapter Two

FINDINGS

It was the major purpose of this study to identify the critical problems of, and the information sources utilized by, state directors of vocational education. The purpose was accomplished by describing the sample, identifying major problems, describing information-seeking methods, identifying information sources, and identifying criteria utilized in information source selection. Tables report data gathered in a mail questionnaire and fifteen telephone interviews with each of the fifteen study participants.

Data are presented in tables as frequencies, percentages, or mean and/or median responses to questionnaire and telephone interview items (see Appendixes). The accompanying narrative description highlights specific findings evident in the tables. Interpretation of findings is reported in Chapter III.

Description of the Sample

The fifteen participants in the study were the state directors of vocational education in the fifteen states selected in a stratified random sample from the continental United States. Participants were described in terms of their experience, age, post-high school professional preparation, and recent graduate training. The states represented in the study were described in terms of the secondary, post-secondary, and adult school populations served with vocational education programs.

Description of Participants

Table 1 presents the years of experience of participants in state-level vocational and technical education administration and supervision. Inspection of the data reveals that nearly one-half the participants reported six to ten years of experience at the state level. One-fifth had five or less years experience and one-third had more than ten years experience.

Eighty percent of the participants were in the forty to fifty-nine age range. Only two participants reported an age of thirty-nine or less. One participant reported an age of sixty or more. The array in Table 2 reveals forty percent in the forty to forty-nine age group and forty percent in the fifty to fifty-nine age group.

TABLE 1

State-Level Experience in Vocational-Technical Education

Years Experience	Number	Percentage
1 - 5	3	20.0
6 - 10	7	46.7
11 - 15	2	13.3
16 or more	3	20.0
TOTAL	15	100.0

TABLE 2

Age of Participants

Age in Years	Number	Percentage
30 - 39	2	13.3
40 - 49	6	40.0
50 - 59	6	40.0
60 or more	1	6.7
TOTAL	15	100.0

In post-high school professional preparation, Table 3 shows that five state directors had five or less years, seven had six or seven years, and three had eight or nine years.

TABLE 3

Post-High School Professional Preparation

Years	Number	Percentage
5 or less	5	33.3
6 - 7	7	46.7
8 - 9	3	20.0
TOTAL	15	100.0

The majority of the participants had not recently participated in graduate training, as can be seen in Table 4. Forty percent had enrolled and sixty percent had not enrolled in graduate courses within the previous five years.

TABLE 4

Graduate Training During Past Five Years

Graduate Training	Number	Percentage
Yes	6	40.0
No	9	60.0
TOTAL	15	100.0

Size of School Populations Served

The size of the secondary school population enrolled in vocational education in the fifteen states was fairly evenly distributed across a wide range. Table 5 shows four states that have fewer than 40,000 students enrolled and four states with 200,000 or more students enrolled in secondary level vocational education programs.

TABLE 5

Secondary School Population Served

Population	Number	Percentage
39,999 or less	4	26.7
40,000 - 79,999	4	26.7
80,000 - 199,999	3	20.0
200,000 or more	4	26.7
TOTAL	15	100.1

The post-secondary school enrollment in vocational and technical education was considerably less than the secondary school enrollment (Table 6).

TABLE 6

Post-Secondary School Population Served

Population	Number	Percentage
9,999 or less	6	42.9
10,000 - 19,999	4	28.6
20,000 or more	4	28.6
TOTAL	14	100.1

Six states reported an enrollment of less than 10,000 students, four states reported 10,000-19,999 students, and four states reported 20,000 or more students. The post-secondary enrollment in one state was not administered by the state director of vocational education.

The adult school population served by the participants was less than either the post-secondary or secondary populations. Seven participants reported there were less than 4,000 in the adult school population enrolled in vocational and technical education. In only one state did the adult school population served number 12,000 or more. One state reported no adults being served by the state director of vocational education.

TABLE 7

Adult School Population Served

Population	Number	Percentage
3,999 or less	7	50.0
4,000 - 7,999	3	21.4
8,000 - 11,999	3	21.4
12,000 or more	1	7.1
TOTAL	14	99.9

Identification of Critical Problems

A total of 341 critical problems of state directors of vocational education were identified in telephone interviews. Interviews were conducted with the fifteen participants over a thirty-week period of time. Problems were related to time of year, need for information, quantity of needed information, and time and effort required in seeking information.

Each critical problem identified was classified as relating to one of six major areas as outlined by Goldhammer.[26] The areas were educational change, teachers, instruction, administrative leadership, major social issues, and finance. Each major area was further subdivided. Reported in Table 8 and Figure 1 are the frequencies and percentages relating to these six major areas.

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[26]Keith Goldhammer, *Issues and Problems in Contemporary Educational Administration* (Eugene: University of Oregon, The Center for the Advanced Study of Educational Administration, 1967).

TABLE 8

Major Professional Problems of State Directors of Vocational Education

Problems Relating to	Number	Percentage
Administrative Leadership	150	44.0
Finance	91	26.7
Educational Change	56	16.4
Teachers	19	5.6
Instruction	13	3.8
Major Social Issues	12	3.5
TOTAL	341	100.0

More major professional problems reported by the state directors of vocational education related to administrative leadership than any other category. One hundred fifty, or forty-four percent, of the problems reported were in this category. Approximately twenty-seven percent of the problems reported were those related to finance, while 16.4 percent were related to educational change. Problems related to teachers (5.6 percent), instruction (3.8 percent) and major social issues (3.5 percent) were the other three major areas. It appeared that administration and finance were the two major concerns of state directors of vocational education.

Of the 150 problems reported that relate to administrative leadership (Table 9), thirty-seven concerned program planning, twenty-seven administrative organization, twenty-two decision-making, thirteen community and human relations, twelve board-superintendent relations, and nine program evaluation. More problems concerned program planning than any other single category, except for legislative control of finances. Staff-related problems were those concerned with recruitment, staff performance, and other personnel-related items. Many states appeared to be in the process of reorganization of the state division of vocational education during this study, thus the high number of problems relating to administrative organization. Figure 2 illustrates the

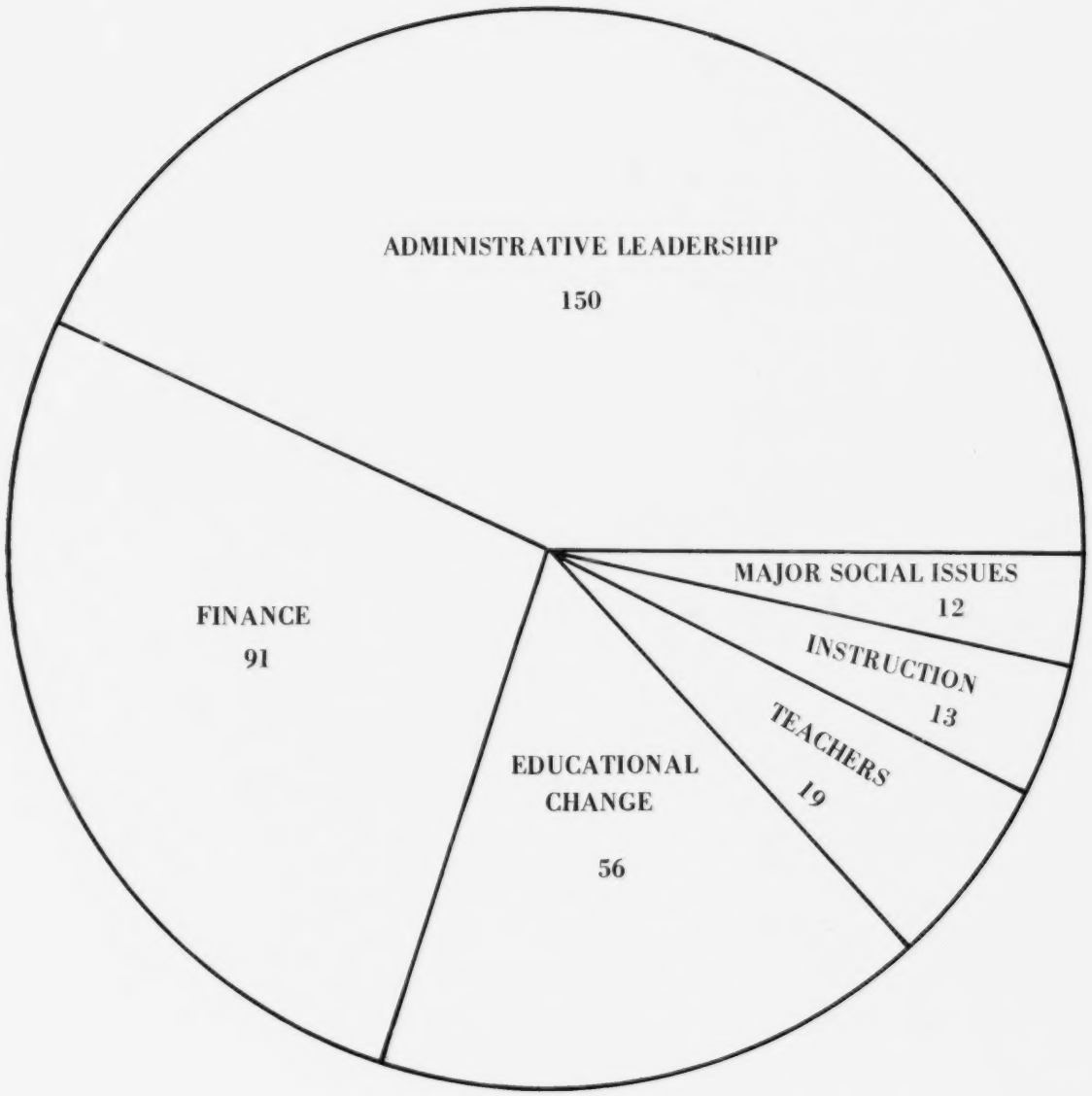

Fig. 1. Major Problems

TABLE 9

Problems Relating to Administrative Leadership

Problem	Number	Percentage
Program Planning	37	24.6
Staff	30	20.0
Administrative Organization	27	18.0
Decision-Making	22	14.6
Community & Human Relations	13	8.6
Board - Superintendent	12	8.0
Program Evaluation	9	6.0
TOTAL	150	99.8

relative frequency of problems relating to administrative leadership.

Of the problems relating to finance (Table 10), 46.1 percent were concerned with legislative control, 35.2 percent with disbursing federal and state aid, and 16.5 percent with obtaining federal and state aid. More problems than were in any other single category related to legislative control. Justification of budgets in testimony before state legislative committees, inability to plan because of legislative inaction on appropriations, and providing information to legislators were typical concerns of participants in this area. Only two of the ninety-one finance-related problems were concerned with community control. These findings are also illustrated in Figure 3.

Table 11 and Figure 4 present data on problems relating to educational change.

In twenty-three of the fifty-six cases, state directors were attempting to encourage adoption of a change in local or area schools. Other problems in this area related to state and local pressures for change, problem-oriented research, communication, and federal influence for change.

Fig. 2. Administrative Leadership

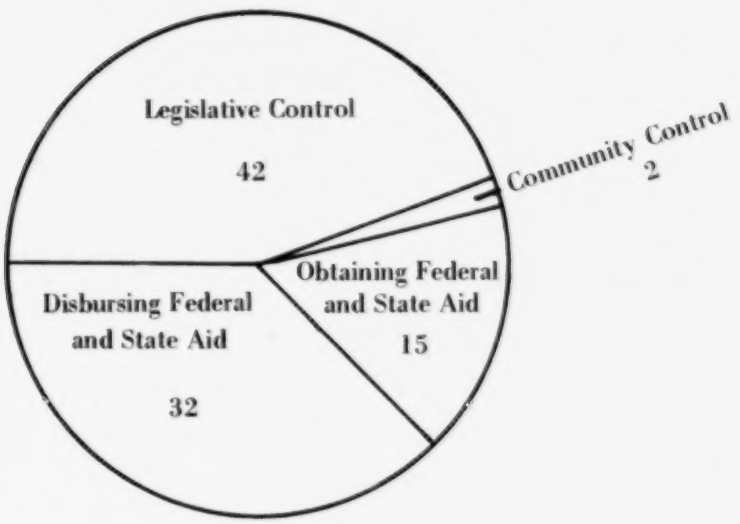

Fig. 3. Finance

TABLE 10

Problems Relating to Finance

Problem	Number	Percentage
Legislative Control	42	46.1
Disbursing Federal & State Aid	32	35.2
Obtaining Federal & State Aid	15	16.5
Community Control	2	2.2
TOTAL	91	100.0

TABLE 11

Problems Relating to Educational Change

Problem	Number	Percentage
Effecting Change	23	41.1
State and Local Pressure for Change	13	23.2
Problem Oriented Research	11	19.6
Communication	6	10.7
Federal Influence for Change	3	5.4
TOTAL	56	100.0

Nineteen problems related to teachers (Figure 5). Of these, fifteen were about certification and supervision of standards. Only two dealt with teacher preparation. One problem each was concerned with teacher organizations and teacher negotiations.

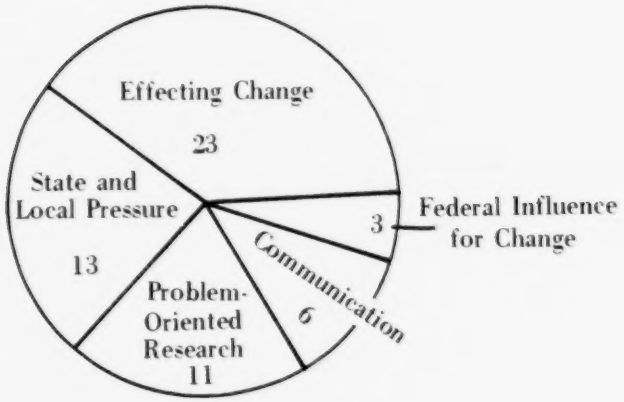

Fig. 4. Educational Change

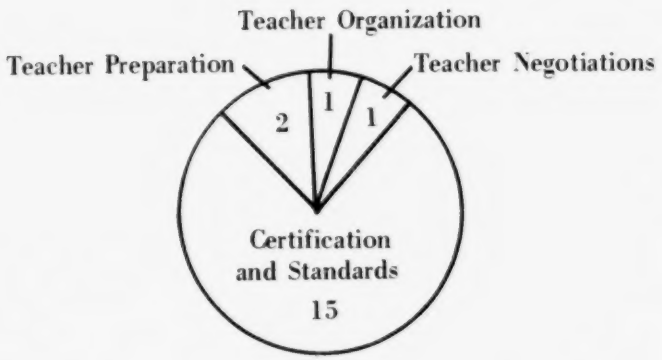

Fig. 5. Teachers

Instruction precipitated thirteen problems (Figure 6). Of these, seven related to curriculum and four to personnel needs. The other two problems were related to evaluation of instruction and in-service education.

Twelve problems related to major social issues (Figure 7). Of these, six were concerned with cultural deprivation, four with the image of vocational education, and two with ecology and the environment.

Table 12 and Figure 8 relate the time of the year during which the interviews were conducted and the major professional problems of state directors of vocational education. Inspection of the data reveals that problems relating to administrative leadership and finance were fairly evenly distributed over time. Problems relating to educational change and instruction were concentrated in the fall of the year.

Of the problems relating to teachers the largest percent was reported during March-May, the time when contracts are being negotiated. Major social issues were reported with greatest frequencies during the October-December and January-March time periods.

Little variance was noted among major professional problems and the need for information in decision-making (Table 13 and Figure 9). Of the 341 professional problems reported, 300 (87.9 percent) were reported as needing information for decision-making; forty-one (12.0 percent) were reported as not needing information for decision-making. The range among problem categories in the need for information was from a low of 84.2 percent to a high of 91.6 percent.

Major professional problems related to quantity of information needed for decision-making are presented in Table 14 and Figure 10. A majority of the problems required moderate to substantial amounts of information in their resolution. Those problems requiring the greatest quantity of information were those related to finance and major social issues.

Participants were asked to indicate the time and effort required in seeking information for each major professional problem (Table 15). The greatest time and effort was required to resolve problems related to finance. Only minimal to moderate time and effort was required to resolve problems related to instruction, administrative leadership, and educational change. These findings are also illustrated in Figure 11.

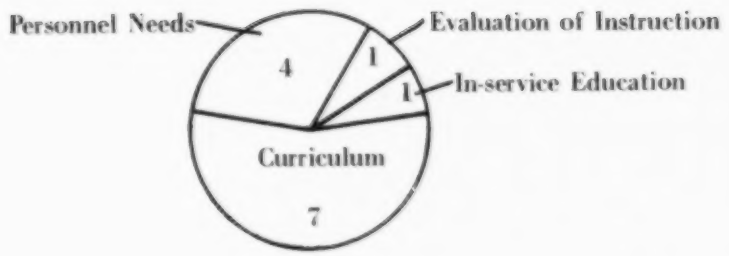

Fig. 6. Instruction

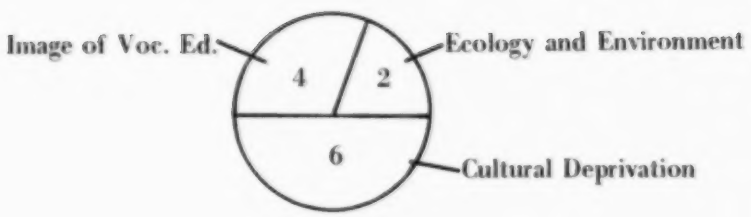

Fig. 7. Major Social Issues

TABLE 12

Time of Year and Major Professional Problems

Problems	Time							
	Oct-Dec		Jan-Mar		Mar-May		Total	
	No.	%	No.	%	No.	%	No.	%
Administrative Leadership	53	35.3	54	36.0	43	28.7	150	100.0
Finance	31	34.1	29	31.9	31	34.1	91	100.1
Educational Change	33	58.9	8	14.3	15	26.8	56	100.0
Teachers	4	21.1	4	21.1	11	57.9	19	100.1
Instruction	10	76.9	2	15.4	1	7.7	13	100.0
Major Social Issues	6	50.0	5	41.7	1	8.3	12	100.0
TOTAL	137	40.2	102	29.9	102	29.9	341	100.0

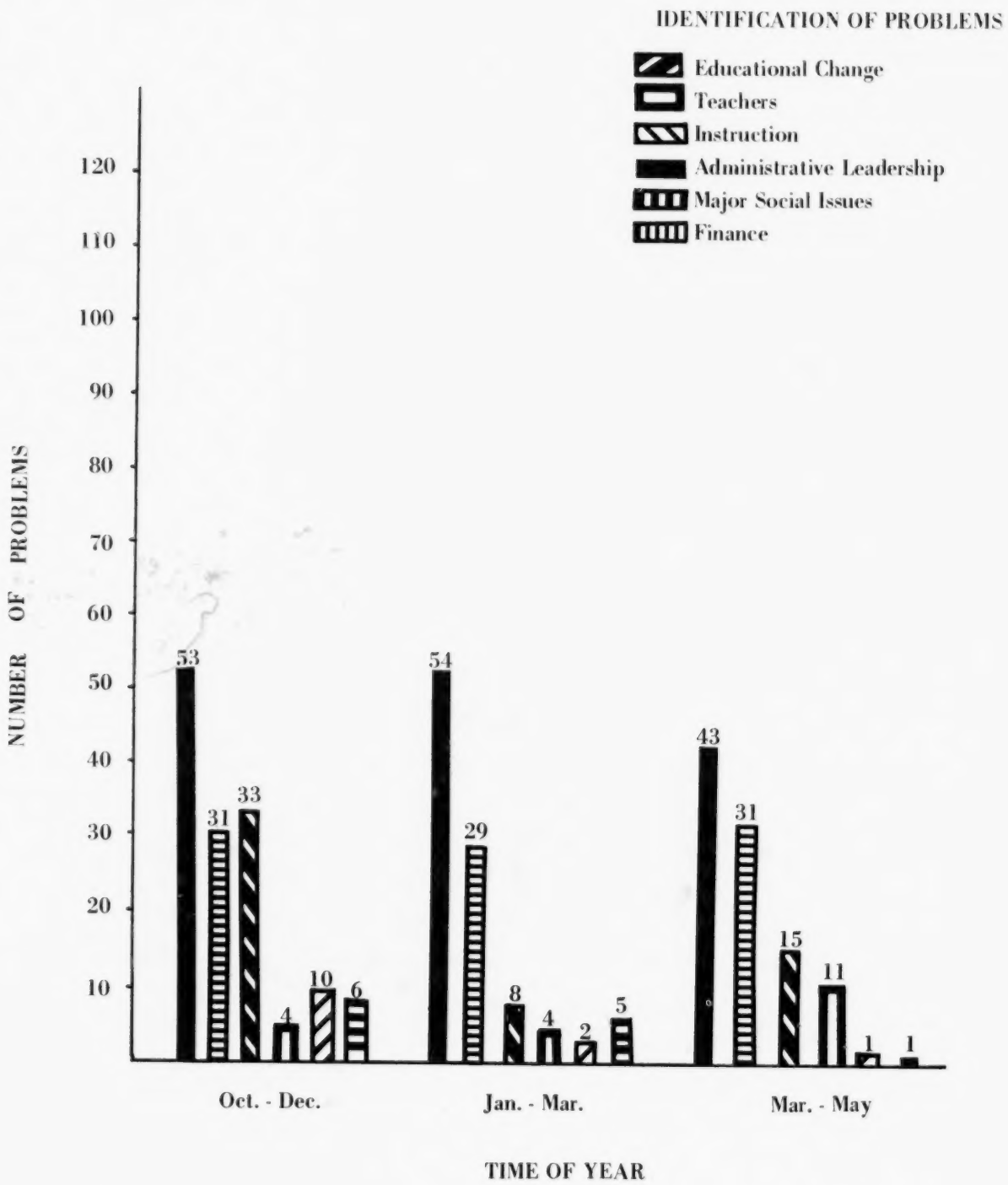

Fig. 8. Time of Year and Major Professional Problems

TABLE 13

Major Professional Problems and Need for Information in Decision-Making

Problems	Information Needed					
	Yes		No		Total	
	Number	Percentage	Number	Percentage	Number	Percentage
Administrative Leadership	133	88.7	17	11.3	150	100.0
Finance	79	86.8	12	13.2	91	100.0
Educational Change	50	89.3	6	10.7	56	100.0
Teachers	16	84.2	3	15.8	19	100.0
Instruction	11	84.6	2	15.4	13	100.0
Major Social Issues	11	91.7	1	8.3	12	100.0
TOTAL	300	88.0	41	12.0	341	100.0

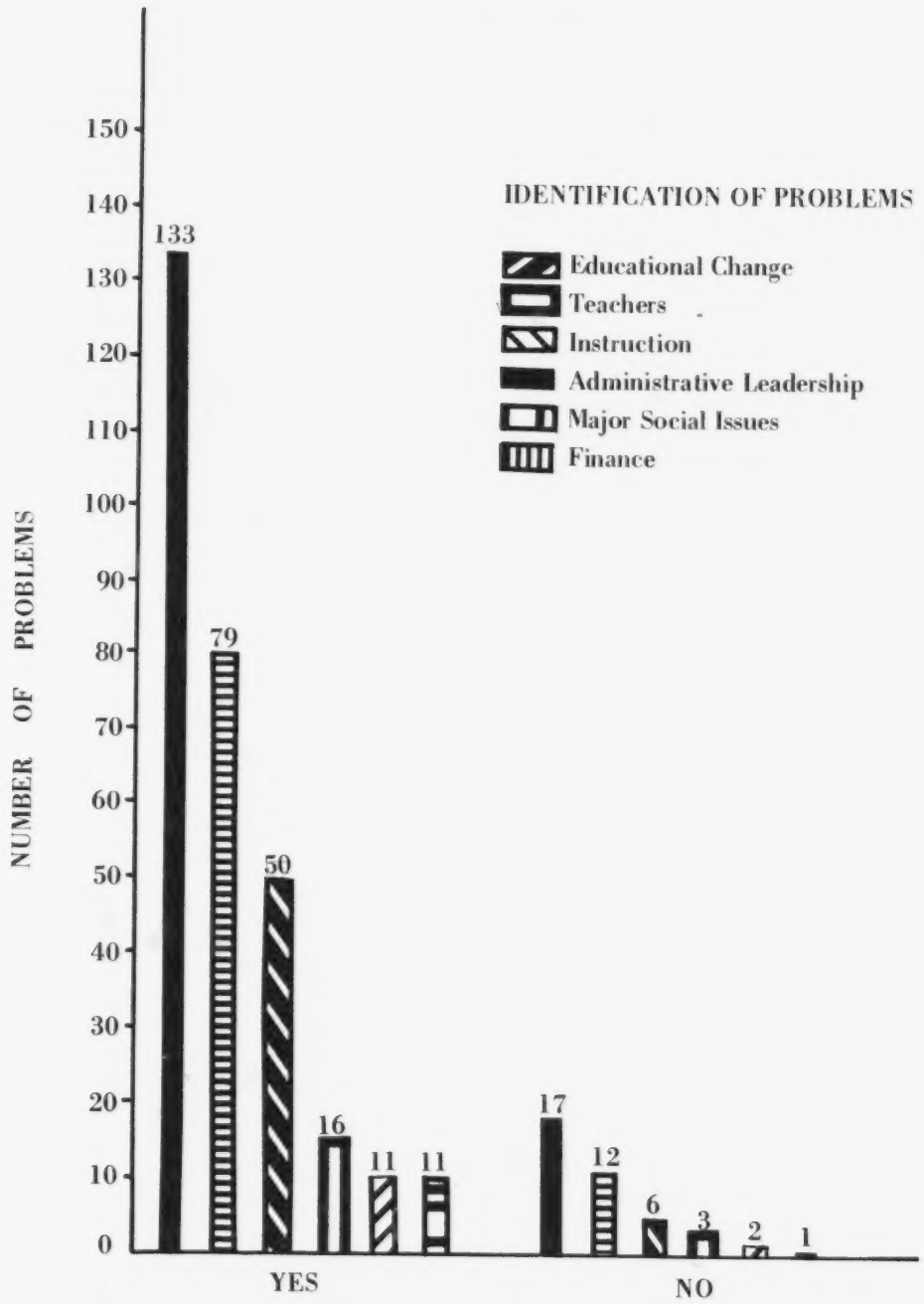

Fig. 9. Major Professional Problems and Need for Information in Decision-Making

TABLE 14

Major Professional Problems and Quantity of Information Needed for Decision-Making

Problem	Quantity of Information							
	Minimal		Moderate		Substantial		Total	
	No.	%	No.	%	No.	%	No.	%
Administrative Leadership	35	27.3	48	37.5	45	35.2	128	100.0
Finance	13	16.7	30	38.4	35	44.9	78	100.0
Educational Change	16	32.6	14	28.6	19	38.8	49	100.0
Teachers	4	26.7	7	46.6	4	26.7	15	100.0
Instruction	2	18.2	5	45.4	4	36.4	11	100.0
Major Social Issues	3	27.3	3	27.3	5	45.4	11	100.0
TOTAL	73	25.0	107	36.6	112	38.4	292	100.0

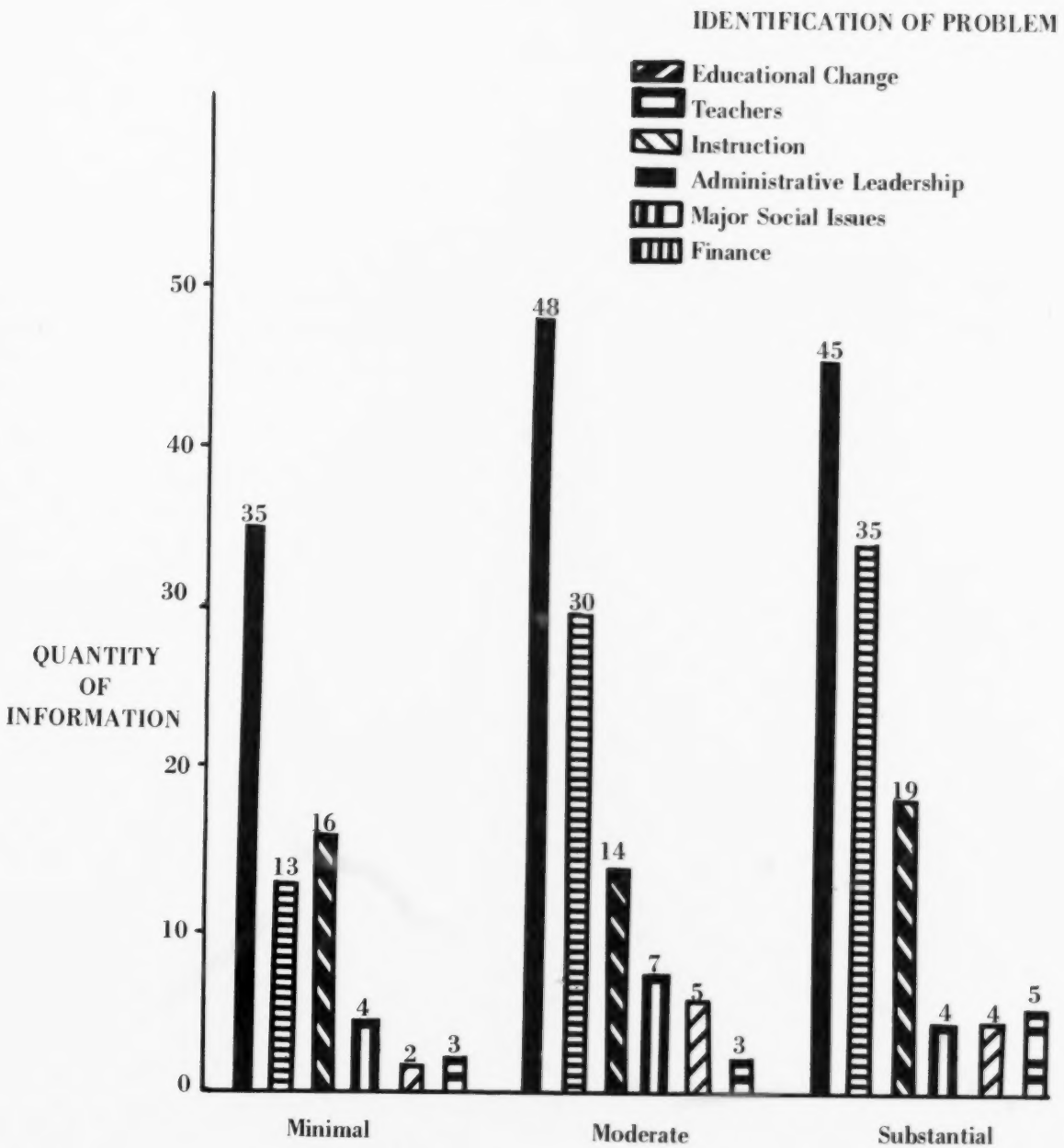

Fig. 10. Major Professional Problems and Quantity of Information Needed for Decision-Making

TABLE 15

Major Professional Problems and Time and Effort Required in Seeking Information

Problem	Time and Effort							
	Minimal		Moderate		Substantial		Total	
	No.	%	No.	%	No.	%	No.	%
Administrative Leadership	60	46.9	42	32.8	26	20.3	128	100.0
Finance	23	29.8	27	34.6	28	35.9	78	100.0
Educational Change	20	43.5	14	30.4	12	26.1	46	99.9
Teachers	5	33.3	7	46.7	3	20.0	15	100.0
Instruction	6	54.5	4	36.4	1	9.1	11	100.0
Major Social Issues	3	27.3	6	54.5	2	18.2	11	100.0
TOTAL	117	40.5	100	34.6	72	24.9	289	100.0

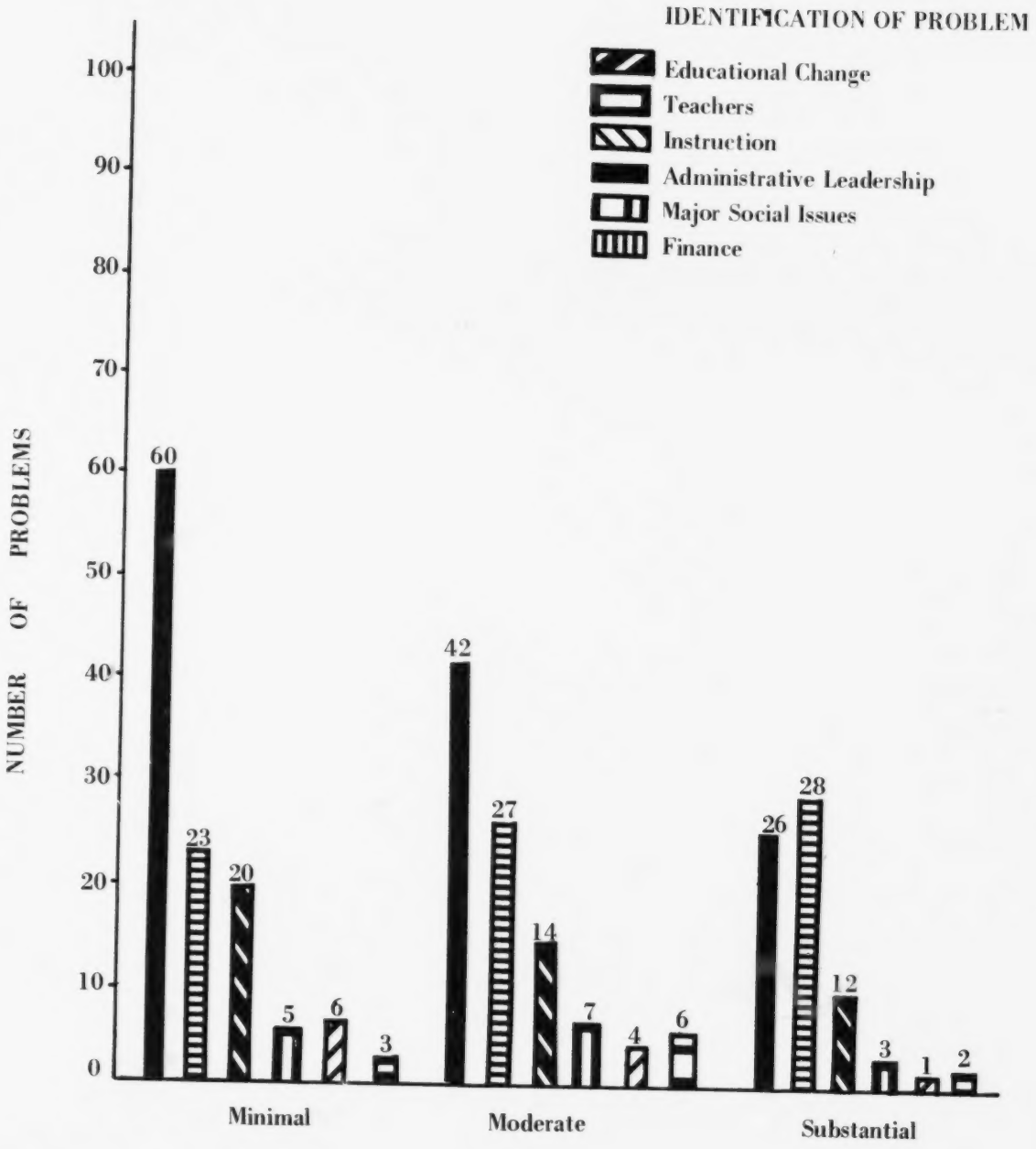

Fig. 11. Major Professional Problems and Time and Effort Required in Seeking Information

Description of Methods

Methods used by state directors of vocational education to resolve their major professional problems were described. Data were gathered concerning methods used to obtain information and their frequency of use.

Participants delegated the responsibility of obtaining information for 40.3 percent of the critical problems (Table 16 and Figure 12). Information was obtained by consulting with individuals or groups in twenty percent of the cases. Inspection of the data reveals participants were more likely to seek information by utilizing personal contact (i.e., delegate, consult, interview, correspond, visit) than by searching literature (i.e., use information agency, search files). In 8.6 percent of the cases, it was necessary to conduct a case study, survey, or experiment to obtain the necessary information.

TABLE 16

Methods Used to Obtain Information on Critical Problems

Method	Number	Percentage
Delegate	121	40.3
Consult	60	20.0
Search Files	41	13.6
Interview, Visit	26	8.6
Use Information Agency	17	5.6
Conduct Case Study	13	4.3
Conduct Survey	12	4.0
Correspond	9	3.0
Conduct Experiment	1	.3
TOTAL	300	99.7

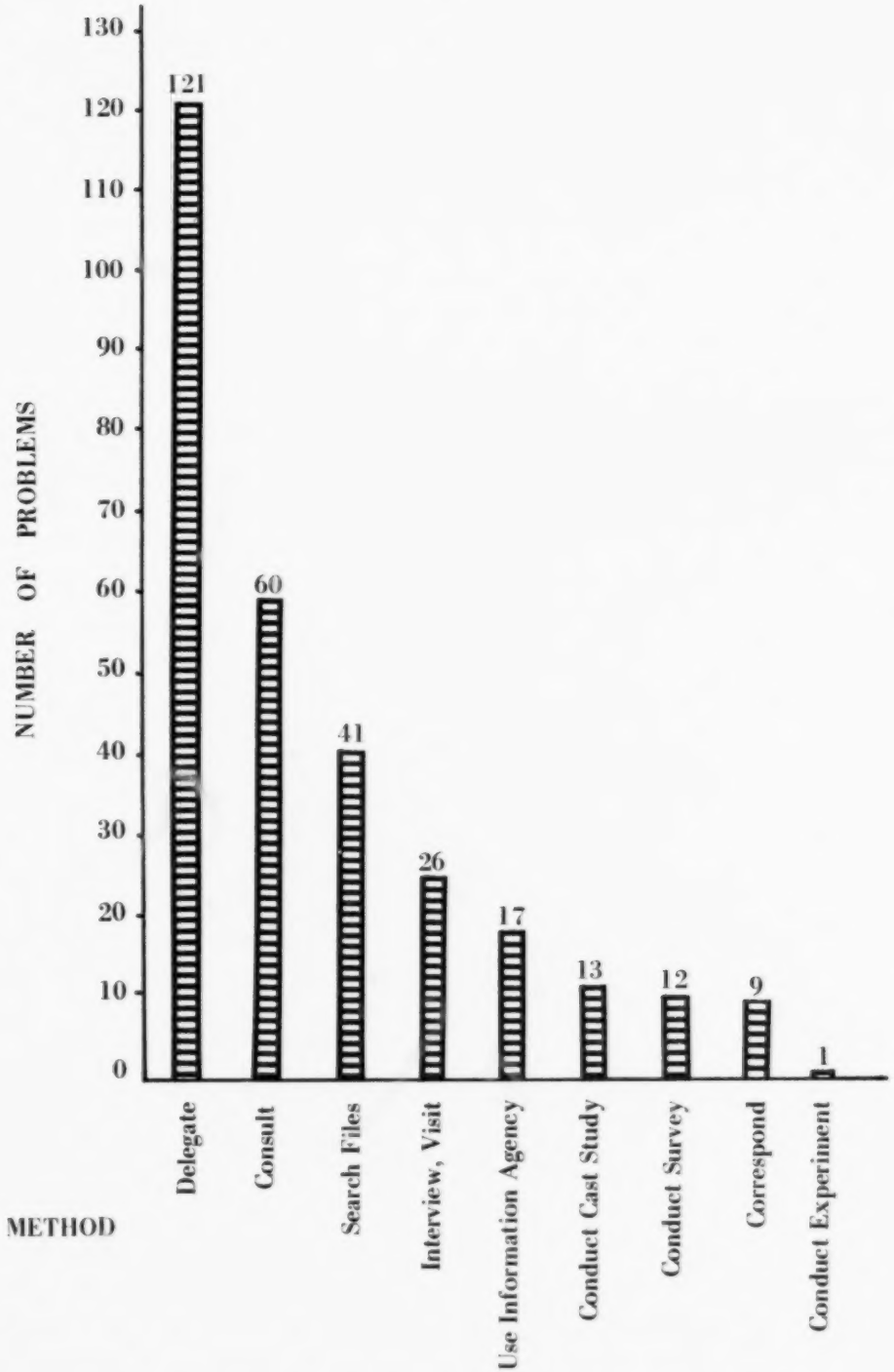

Fig. 12. Methods Used to Obtain Information on Critical Problems

After the participants indicated the information-seeking method that would be used in resolving a specific problem, they were asked to indicate to what extent they would normally utilize this method to resolve similar problems. Table 17 reveals the frequency of anticipated use of the various methods. State directors of vocational education used delegation as a means of obtaining information "constantly." An information agency was used only "occasionally." The median utilization of the other methods was "often."

There were forty problems reported that required no information for decision-making (Table 18 and Figure 13). When no information was needed, problems were resolved in a judgmental manner in thirteen cases, in a cooperative manner in nine cases, and in an arbitrary manner in eight cases. Problems were resolved by directives in six cases and by recommending alternatives to a higher level in four cases.

Identification of Sources

Sources of information used by state directors of vocational education to resolve their critical problems were identified. Data were gathered concerning the type of information desired, form of needed information, materials actually used in problem resolution, personnel used as information sources, frequency of interaction with various groups to seek information, frequency of use of information and governmental agencies, and frequency of referral to certain print media.

Participants needed information to resolve 283 problems (Table 19 and Figure 14). In ninety-nine of the 283 cases demographic studies or data was the type of information requested. Value analysis and projections, when information had been analyzed and put in useable form, was named in fifty-nine cases as the type of needed information. Other types of needed information, in order of frequency of use, were: experienced people (thirty-nine cases), expert opinion in written form (twenty-eight cases), case studies (twenty-seven cases), historical studies (fifteen cases), survey research (fourteen cases), and experimental research (two cases). It appeared that the preferred source of information was raw or treated data followed by expert opinion. Research information was needed least. Descriptive research was preferred when compared with experimental studies.

The form of information needed to resolve critical problems of state directors of vocational education is shown in Table 20. Findings revealed that for 39.5 percent of the problems, actual data or documents were needed. For 60.4 percent of the problems, the information needed to be summarized, synthesized or evaluated. Participants needed summarized information for 30.4 percent, evaluated information for 22.6 percent, and synthesized information for 7.4 percent of the problems.

TABLE 17

Frequency of Use of Information-Seeking Methods

Method	Occasionally		Often		Constantly		Total		Median
	No.	%	No.	%	No.	%	No.	%	
Case Study	5	41.7	5	41.7	2	16.6	12	100.0	Often
Survey	5	41.7	5	41.7	2	16.6	12	100.0	Often
Consult	11	19.6	27	48.2	18	32.1	56	99.9	Often
Interview, Visit	10	38.5	15	57.7	1	3.8	26	100.0	Often
Correspond	0	0.0	9	100.0	0	0.0	9	100.0	Often
Files	11	26.8	17	41.5	13	31.7	41	100.0	Often
Information Agency	10	62.5	6	37.5	0	0.0	16	100.0	Occasionally
Delegate	5	4.1	36	29.8	80	66.1	121	100.0	Constantly
TOTAL	57	19.5	120	40.9	116	39.6	293	100.0	

TABLE 18

Decision Process When No Information Was Required for Problem Resolution

Process	Number	Percentage
Judgmental	13	32.5
Cooperative	9	22.5
Arbitrary	8	20.0
Directive	6	15.0
Recommend Alternatives (to higher level)	4	10.0
TOTAL	40	100.0

TABLE 19

Type of Information Desired for Use in Problem Resolution

Type	Number	Percentage
Demographic Studies (Data)	99	35.0
Value Analysis, Projections	59	20.9
Experienced People	39	13.8
Expert Opinion (in written form)	28	9.9
Case Studies	27	9.5
Historical Studies	15	5.3
Survey Research	14	5.0
Experimental Research Results	2	.7
TOTAL	283	98.1

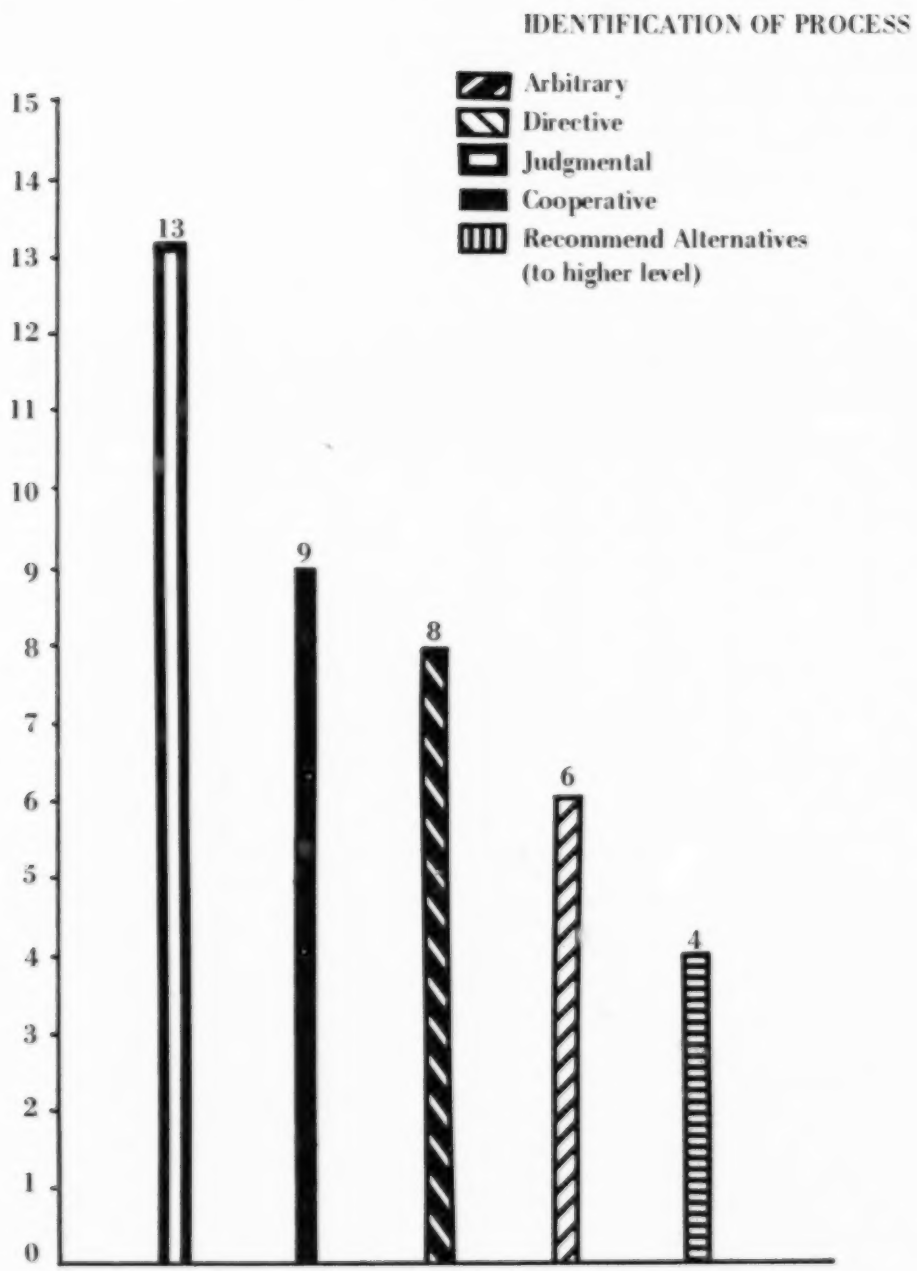

Fig. 13. Decision Process When No Information Was Required for Problem Resolution

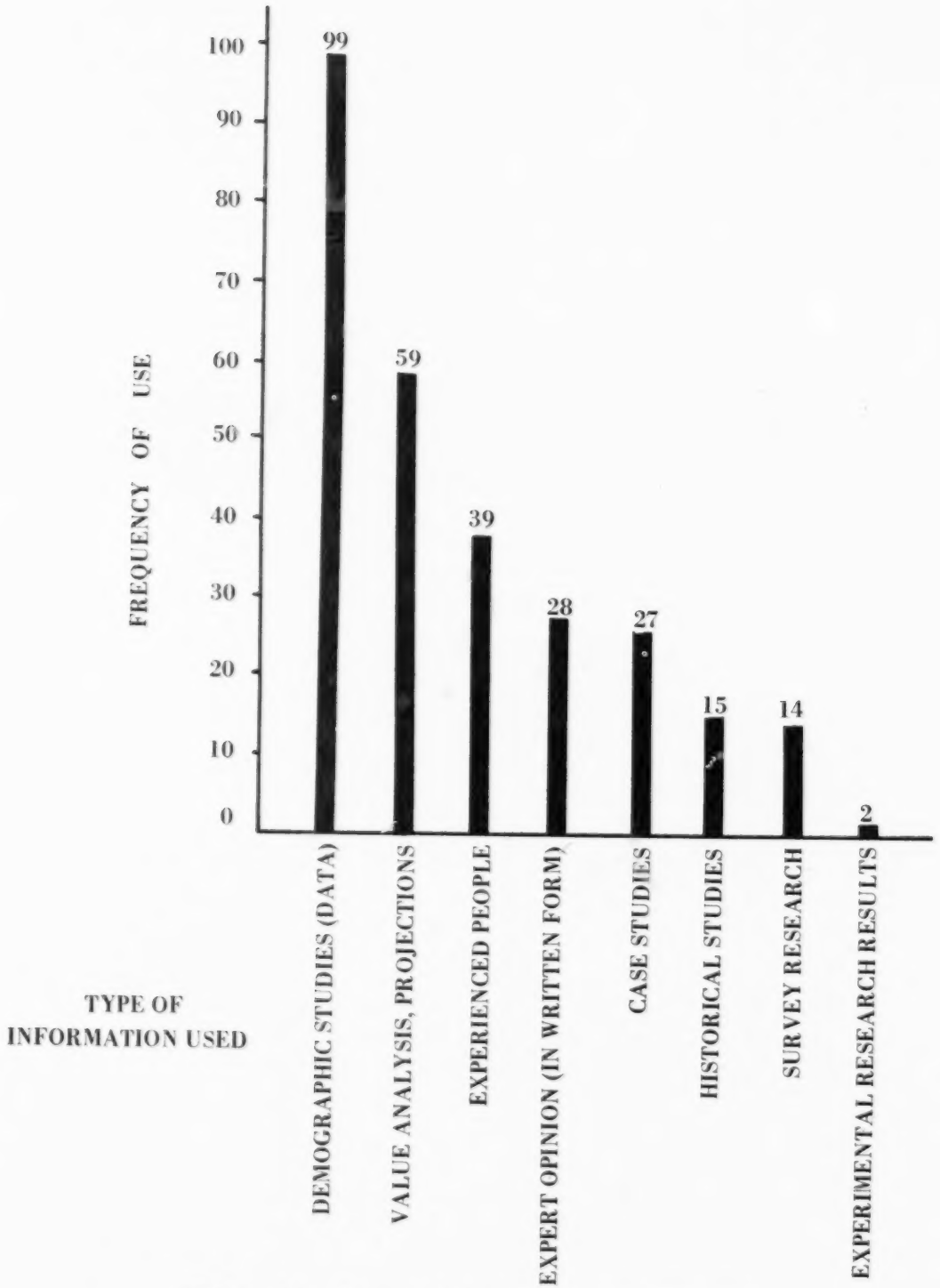

Fig. 14. Type of Information Desired for Use in Problem Resolution

TABLE 20

Form of Information Needed

Form	Number	Percentage
Actual Data or Document	117	39.5
Summarized Information	90	30.4
Evaluated Information	67	22.6
Synthesized Information	22	7.4
TOTAL	296	99.9

State directors used reports and pamphlets for problem resolution in 85.8 percent of the cases shown in Table 21. Indexes, books, guides, periodicals, and bibliographies were seldom used for resolution of specific problems.

TABLE 21

Materials Used for Problem Resolution

Materials	Number	Percentage
Reports & Pamphlets	182	85.8
Books	9	4.2
Indexes	9	4.2
Guides	7	3.3
Periodicals	3	1.4
Bibliographies	2	.9
TOTAL	212	99.8

Responses displayed in Table 22 were obtained by telephone interview. State directors were asked what personnel they used as information sources to resolve specific problems. Substantive personnel were used in resolution of 156 problems and information specialists were utilized in 105 cases. Information specialists were used in problem resolution to a greater extent than substantive personnel only when problems related to finance. Technical/clerical personnel were seldom used as the major information source for problem resolution. These findings are also illustrated in Figure 15.

State directors of vocational education tended to interact with their peer group within their state more than with any other single group. Table 23 reveals the median frequency of interaction per month of state directors with various groups to seek information. Directors interacted with their peer group within their state a median of ten times per month. The median frequency of interaction of state directors with the state superintendent and board, clientele, and business/industry was 4.5 times per month. Next in order were advisory councils, peer groups outside the state, and state deputy or associate commissioners.

Information agencies outside the state were not frequently used by participants (Table 24). The median state director utilized the Educational Resources Information Center (ERIC) two times per month and The Center for Vocational and Technical Education one and one-half times per month. The National Technical Information Service (NTIS), the School Research Information Service (SRIS), and University Microfilms were not used by more than one-half the participants.

Participants utilized state and federal institutions to a greater extent than information agencies (Table 25). The U.S. Office of Education was utilized with the greatest frequency. The state department of education research office, colleges and universities, and the U.S. Department of Labor were utilized to some extent. The state planning office or development board, regional planning commissions, or the U.S. Department of Commerce were utilized with a frequency of once or less each month.

Participants were asked to what extent they referred to certain nationally available print media. Table 26 and Figure 16 reveal the frequency per month of referral of state directors to the *American Vocational Journal*, monographs of The Center for Vocational and Technical Education, and various indexing and abstracting services. The *American Vocational Journal*, *Abstracts of Instructional Materials in Vocational and Technical Education* (AIM), and *Abstracts of Research Materials in Vocational and Technical Education* (ARM) were referred to "often." State directors "occasionally" referred to monographs of The Center, *Dissertation Abstracts*, *Education Index*, and *Research in Education*. *Current Index to Journals in Education* and *Psychological Abstracts* were not referred to by the majority of the participants.

TABLE 22

Personnel Used as Information Sources

Problems	Personnel: Information Specialists N	%	Personnel: Substantive Personnel N	%	Total N	%
Administrative Leadership	45	42.5	61	57.5	106	100.0
Finance	40	53.3	35	46.7	75	100.0
Educational Change	13	29.5	31	70.5	44	100.0
Teachers	3	20.0	12	80.0	15	100.0
Instruction	2	20.0	8	80.0	10	100.0
Major Social Issues	2	18.2	9	81.8	11	100.0
TOTAL	105	40.2	156	59.8	261	100.0

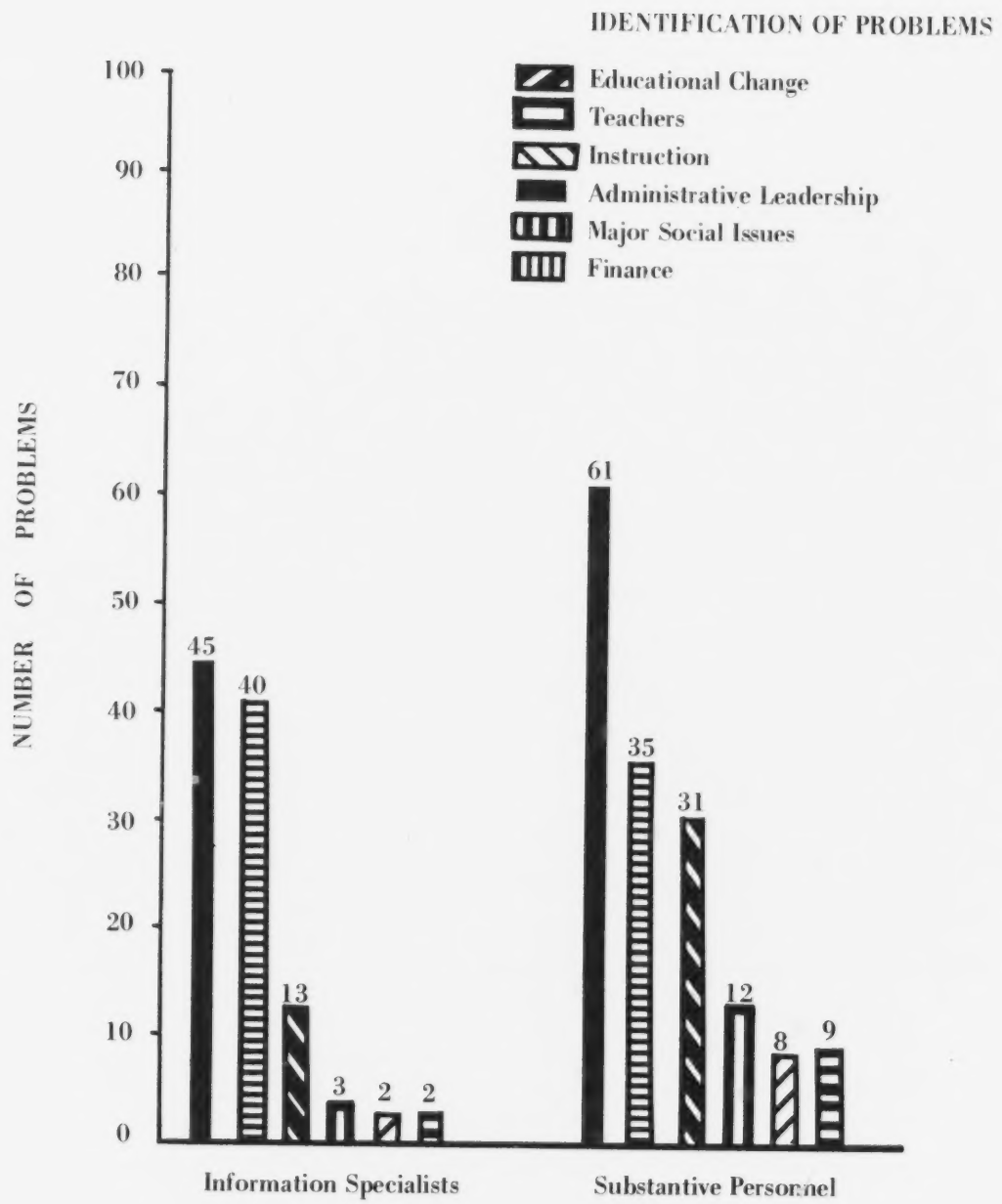

Fig. 15. Personnel Used as Information Sources

TABLE 23

Frequency Per Month of Interaction With Various Groups to Seek Information

Groups	Frequency of Interaction								Median
	None		1-5		6 or more		Total		
	N	%	N	%	N	%	N	%	
Peer Group in State	0	0.0	5	33.3	10	66.7	15	100.0	10.0
State Superintendent and Board	0	0.0	8	53.3	7	46.7	15	100.0	4.5
Business/Industry	0	0.0	8	53.3	7	46.7	15	100.0	4.5
Clientele	2	13.3	6	40.0	7	46.7	15	100.0	4.5
Advisory Council	0	0.0	10	66.7	5	33.3	15	100.0	4.0
Peer Group Outside State	1	6.7	11	73.3	3	20.0	15	100.0	2.0
State Deputy or Associate Commissioner	5	33.3	6	40.0	4	26.7	15	100.0	1.5
Mean ($\bar{X}$)	1.1	7.5	7.7	51.6	6.1	40.9	14.9	100.0	4.4

TABLE 24

Frequency Per Month of Use of Information Agencies

Agencies	Frequency of Use								
	Not Used		1-5		6 or more		Total		Median
	N	%	N	%	N	%	N	%	
ERIC	1	6.7	11	73.3	3	20.0	15	100.0	2.0
The Center	3	20.0	11	73.3	1	6.7	15	100.0	1.5
University Microfilms	10	66.7	4	26.7	1	6.7	15	100.0	0.0
SRIS	11	73.3	4	26.7	0	0.0	15	100.0	0.0
NTIS	14	93.3	1	6.7	0	0.0	15	100.0	0.0
Mean ($\bar{X}$)	7.8	52.0	6.2	41.3	1.0	6.7	15	100.0	0.7

TABLE 25

Frequency Per Month of Use of State and Federal Institutions

Institutions	Frequency of Use								
	Not Used		1-5		6 or more		Total		Median
	N	%	N	%	N	%	N	%	
U.S.O.E.	1	6.7	8	53.3	6	40.0	15	100.0	5.0
SDE Research Office	3	20.0	8	53.3	4	26.7	15	100.0	3.5
U.S. Dept. of Labor	2	13.3	11	73.3	2	13.3	15	99.9	2.0
Colleges & Universities	1	6.7	14	93.3	0	0.0	15	100.0	2.0
State Planning Office or Development Board	5	33.3	10	66.7	0	0.0	15	100.0	1.0
Regional Planning Commissions	8	53.3	7	46.7	0	0.0	15	100.0	0.0
U.S. Dept. of Commerce	9	60.0	5	33.3	1	6.7	15	100.0	0.0
Mean ($\bar{X}$)	4.1	27.3	9.0	60.0	1.9	12.7	15	100.0	1.9

TABLE 26

Frequency of Referral to Certain Print Media

Print Media	Frequency of Referral										
	Never		Occasionally		Often		Constant		Total		Median
	N	%	N	%	N	%	N	%	N	%	
American Vocational Journal	1	6.7	2	13.3	9	60.0	3	20.0	15	100.0	Often
Monographs of The Center	1	6.7	10	66.7	4	26.7	0	0.0	15	100.0	Occasionally
Indexing and Abstracting Services											
ARM	2	13.3	4	26.7	7	46.7	2	13.3	15	100.0	Often
AIM	2	13.3	5	33.3	5	33.3	3	20.0	15	99.9	Often
RIE	4	26.7	7	46.7	3	20.0	1	6.7	15	100.1	Occasionally
Dissertation Abstracts	5	33.3	9	60.0	1	6.7	0	0.0	15	100.0	Occasionally
Education Index	5	33.3	10	66.7	0	0.0	0	0.0	15	100.0	Occasionally
CIJE	8	53.3	6	40.0	1	6.7	0	0.0	15	100.0	Never
Psychological Abstracts	8	53.3	7	46.7	0	0.0	0	0.0	15	100.0	Never
Mean ($\bar{X}$)	4.0	26.7	6.7	44.4	3.3	22.2	1		15		Occasionally

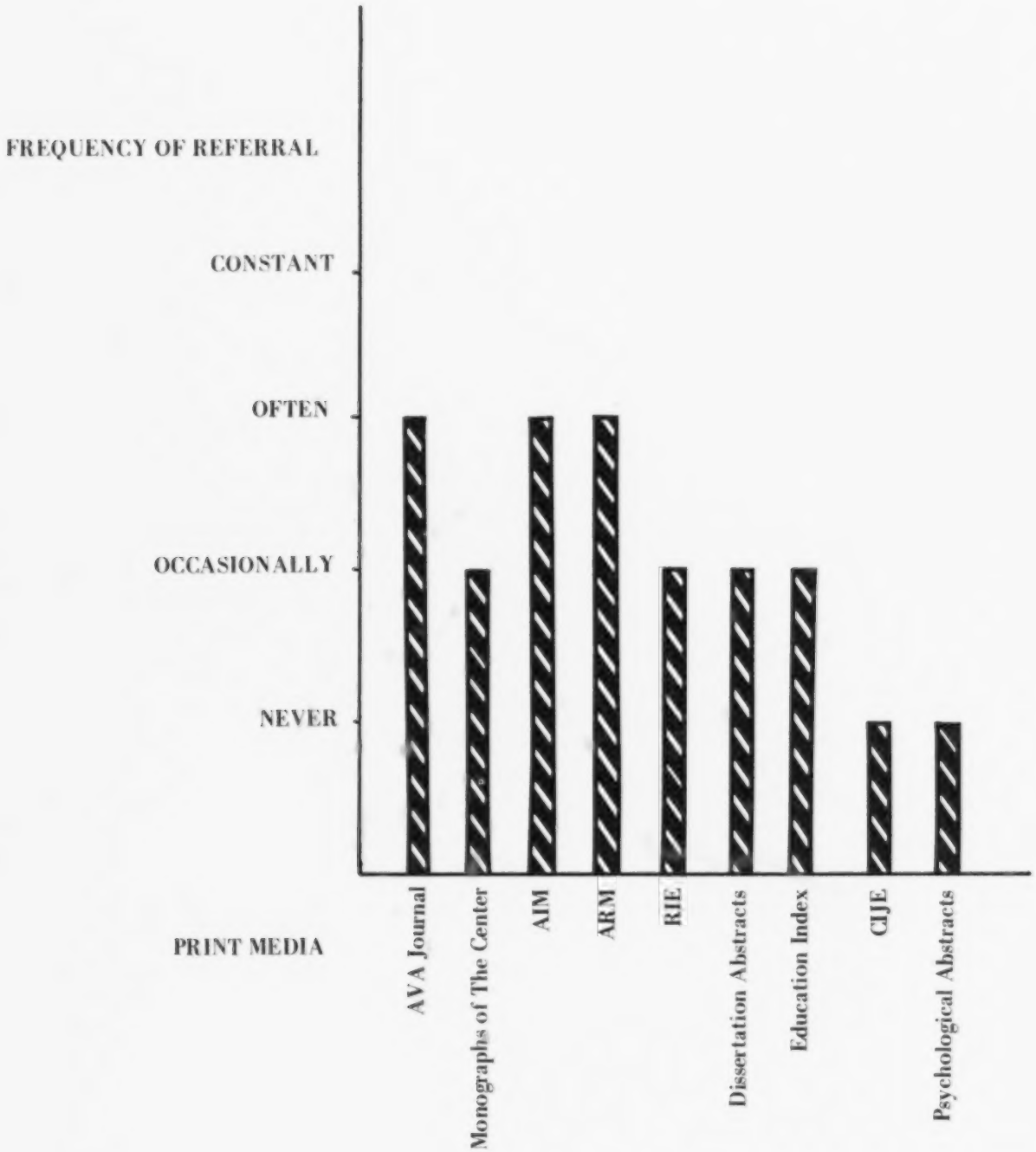

Fig. 16. Frequency of Referral to Certain Print Media

Identification of Criteria

It was a major objective of the study to identify criteria employed by state directors of vocational education in selecting information sources. Each participant was asked to state the reason for selection of an information source after he had indicated what source he used.

Table 27 reports the perceived criteria for use of materials as sources of information. In over one-half of the cases, materials were selected because of the type and/or form of information. Accessibility was stated as the major criteria for selection in 30.4 percent of the cases. Type and/or form of data and accessibility were major considerations in selecting materials. Familiarity or degree of experience, content quality, and currentness were not major factors in selecting information.

Table 28 reports the perceived criteria for use of people within the division as information resources. Major criteria for selection of people as information sources was because of their job responsibility (29.6 percent), the type or form of needed data (22.5 percent), their understanding of the problem (19.7 percent), and the content quality of the information they provided (17.3 percent). Information specialists were more often selected because of their job responsibility; substantive personnel were more often selected because they best understood the problem or because of the content quality of the information they provided. Accessibility did not appear as a major factor. This may be attributable to the fact that all these people were accessible to the state director of vocational education. Therefore, some other factor than accessibility influenced their utilization of information resources.

Summary

It was the purpose of this study to identify the critical problems of, and the information sources utilized by, state directors of vocational education.

Description of the Sample

The sample consisted of fifteen states selected in a stratified random sample. Data were collected by mail questionnaire and fifteen telephone interviews with each participant. The median participant had six to ten years experience in the state department of education, was forty to fifty-nine years old, had no recent graduate training, and served approximately 80,000 secondary, 12,500 post-secondary, and 4,000 adult students.

TABLE 27

Perceived Criteria for Use of Materials as Sources of Information

Criteria	Books		Guides		Indexes		Reports/ Monographs		Total	
	N	%	N	%	N	%	N	%	N	%
Type of Data/Form	6	66.6	5	71.4	4	44.4	82	50.6	97	51.8
Accessibility	2	22.2	0	0.0	2	22.2	53	32.7	57	30.4
Content Quality	0	0.0	2	28.5	1	11.1	13	8.0	16	8.5
Most Current	0	0.0	0	0.0	0	0.0	12	7.4	12	6.4
Familiarity/Degree of Experience	1	11.1	0	0.0	2	22.2	2	1.2	5	2.6
TOTAL	9	99.9	7	99.9	9	99.9	162	99.9	187	99.7

TABLE 28

Perceived Criteria for Use of People
Within the Division as Information Resources

Criteria	Information Specialist		Substantive Personnel		Directors, Higher Level		Total	
	N	%	N	%	N	%	N	%
Job Responsibility	42	42.8	29	20.0	4	40.0	75	29.6
Type/Form of Data	21	21.4	32	22.0	4	40.0	57	22.5
Best Understand Problem	15	15.3	33	22.7	2	20.0	50	19.7
Content Quality	12	12.2	32	22.0	0	0.0	44	17.3
Familiarity (of Director) (Degree of Experience)	4	4.0	12	8.2	0	0.0	16	6.3
Accessibility	4	4.0	7	4.0	0	0.0	11	4.3
TOTAL	98	99.7	145	99.7	10	100.0	253	99.7

Identification of Critical Problems

Major problems of state directors, in order of frequency of occurrence, were those related to administrative leadership, finance, educational change, teachers, instruction, and major social issues. Little relationship was noted between the subject of major professional problems and time of year or whether information was needed. Nearly ninety percent of the problems required information for their resolution. Problems related to administrative leadership required the least amount of information and problems related to finance required the largest amount of information.

Description of Methods

State directors, for 60.3 percent of the problems, delegated the responsibility of obtaining information or consulted with individuals or groups. Participants utilized personal contact most as a means of solving problems; print media was utilized second; conducting a survey or study was utilized least.

Identification of Sources

Sources of information used by participants were identified. It appeared that the preferred source of information was raw or treated data followed by expert opinion. Research information was needed least. Descriptive research was preferred when compared with experimental studies. In approximately forty percent of the problems, actual data or documents were needed; in approximately sixty percent of the problems, the information needed to be summarized, synthesized, or evaluated. Reports and pamphlets were the preferred form of materials. Substantive personnel were utilized to the greatest extent as personal sources of information, followed by information specialists. Technical/clerical personnel were seldom utilized. The major group with which state directors interacted was with their peers within the state. Information agencies outside the state were not frequently used. The U.S. Office of Education and the state department of education research office were cited as being utilized frequently to provide information. Nationally available print media utilized often as information resources were the *American Vocational Journal* and *Abstracts of Instructional Materials in Vocational and Technical Education* (AIM) and *Abstracts of Research Materials in Vocational and Technical Education* (ARM).

Identification of Criteria

Major criteria for utilization of printed materials were the type or form of information and accessibility. The major criterion

for utilization of people as information sources was because of their job responsibility. Substantive personnel were selected because they best understood the problem or because of the content quality of the information they provided. State directors wanted information that was in a type and form that could be readily translated for decision-making. Accessibility of information was not a significant factor in the utilization of personal information sources. This may be attributable to the fact that the state directors perceived all personnel who worked for them as accessible, therefore they selected information sources on the basis of other criteria.

Chapter Three

CONCLUSIONS, IMPLICATIONS, AND RECOMMENDATIONS

The findings of the study were the basis for conclusions, implications, and recommendations having possible significance for researchers and developers, information and diffusion specialists, and state directors of vocational education.

Conclusions and Implications

Conclusions and implications are presented by section. Those sections are: Major Problems of State Directors, Methods Used to Seek Information, Sources Used to Provide Information, and Criteria for Information Source Utilization.

Major Problems of State Directors

Major problems of state directors of vocational education related to administrative leadership and finance. Information dissemination systems designed to serve state leadership personnel must provide relevant data and documentation in these major problem areas.

Few problems related to teachers or instruction. The role of the state director of vocational education appears to preclude his becoming directly involved in problems of this nature. Information relating to teachers and instruction generally should be disseminated to individuals other than state directors.

Major social issues were seldom considered as critical professional problems. Evidently state directors feel major social issues do not require special emphasis or that such problems should be handled at another level. Information relating to major social issues would normally receive little attention by state directors of vocational education.

Program planning, staff, administrative organization, and decision-making were major sub-problems within the problem area of administrative leadership. Information specialists and others attempting to meet information needs of state directors will find it necessary to provide relevant information on these four topics.

The greatest time and effort was expended in resolving problems related to finance. Major finance-related problems were those dealing with legislative control and disbursing federal and state aid. Information needs relating to finance were primarily for data and/or for equitable and justifiable distribution formulas or procedures. Many finance problems were unique to each state, thus indicating a need for state-based management information systems with appropriate supporting personnel.

Effecting changes in vocational education programs was a major concern of state directors. Information specialists must not only provide information on needed program improvements, but also must provide methodological information on how to effect educational change. This information was needed with the greatest frequency during the October to December time frame.

Information was needed to resolve 87.9 percent of the reported problems. State directors recognized their need for accessible relevant information to resolve their critical problems. Information must be provided when needed and in a usable form.

Methods Used to Seek Information

Participants were more likely to seek information through personal contacts than by searching literature. This confirms findings of previous user studies conducted with varying populations.

The resolution of problems was constantly delegated to subordinates. Literature searching is often the responsibility of state department personnel other than the state director of vocational education. Printed materials should be made available to individuals upon whom state directors rely for information. These individuals can then summarize needed information at appropriate times.

Information agencies were seldom used by state directors. This may be because problem resolution is delegated to subordinates who would be expected to utilize information agencies. It may also mean that services of information agencies are not perceived as relevant or useful by state directors for the majority of their problems.

Sources Used to Provide Information

The type of information desired by participants for use in problem resolution was analyzed. The preferred source of information was raw or treated data followed by expert opinion. Research information was needed least but descriptive research was

preferred when compared with experimental studies. Information dissemination systems serving state directors of vocational education should provide data to answer specific information needs. Value analysis and projections of data are often required. Such data should be interpreted by expert opinion which would assist the state director in making decisions. Results of problem-oriented research may be essential information, but it must often be summarized and interpreted to be useful. State directors preferred the actual data or document in forty percent of the cases. In sixty percent of the cases, they preferred the information in summary, synthesis, or evaluative form. Personnel with substantive expertise should be utilized to interpret information in critical problem areas for state directors.

Study participants utilized reports and pamphlets almost to the exclusion of bibliographies, books, guides, indexes, and periodicals. They evidently preferred information obtainable in report form and did not want to search indexes and/or bibliographies. Information must be put in brief, useable form if it is to be utilized by state directors of vocational education.

Substantive personnel were utilized most as personal resources, but information specialists were also used extensively by many state directors. Clerical/technical personnel were seldom used as personnel sources of information. The role of information specialists is emerging within some state department structures. Greater utilization of personnel with major responsibility for searching and summarizing information for others should expand the breadth of information available to a state director.

State directors interacted with their peer groups within their states more than with any other personal source in seeking information for problem resolution. They evidently perceived their peers as accessible and substantively qualified.

Information agencies outside the state were frequently used. The Educational Resources Information Center (ERIC) was used more than any other external information agency. Information agencies must offer services that are perceived as accessible and useful if high utilization by state directors is achieved.

The U.S. Office of Education was used as an information source more than any other federal or state institution. Funding of vocational education programs by the U.S. Office of Education to the state divisions of vocational and technical education would account for this finding. The research office in the state department of education was utilized more than colleges and universities. An office within the state department offering services to state department staff may be perceived by the state director as more accessible and more oriented to serving state department needs.

Print media used often by state directors were the *American Vocational Journal*, *Abstracts of Research Materials in Vocational and Technical Education* (ARM), and *Abstracts of Instructional Materials in Vocational and Technical Education* (AIM). Monographs of The Center for Vocational and Technical Education, *Research in Education*, *Education Index* and *Dissertation Abstracts* were used occasionally. It could be assumed that the print media used often are readily accessible to state directors of vocational education. They would receive the *American Vocational Journal* as American Vocational Association members. The Center for Vocational and Technical Education provides AIM and ARM on a complimentary basis to each state director. Print media perceived as accessible and useful will be utilized most often by state directors of vocational education.

Criteria for Information Source Utilization

Printed materials were generally selected because of the type and/or form of the information. Accessibility of materials was also a major factor. Materials must be accessible to be utilized. They must also be in a readily useable form. Information product developers must determine content and format requirements prior to publications development if products are to have high impact and widespread acceptance.

Personal information sources of a substantive nature were utilized because of their job responsibility, the quality of their work, their understanding of the problem, or the type or form of data they could provide. All personnel within the state division of vocational education may have been perceived as accessible. State directors utilize personal information sources to a great extent and often utilize people to provide information above and beyond their normal job requirements. State department staffs should include personnel of varying expertise to increase the capacity of the organization to respond more effectively to diverse problem situations.

Recommendations

The findings and conclusions of the study serve as a basis for the following recommendations.

1. It is recommended that information dissemination systems develop a means to provide state directors of vocational education necessary data to assist them in resolving their critical problems related to administration and finance.

2. It is recommended that information specialists be more effectively utilized to digest information and summarize it in a

form useful for decision-making by state directors of vocational education.

3. It is recommended that information relating to durable problems of national significance be reviewed and analyzed by information dissemination systems such as the Information Services Division of The Center for Vocational and Technical Education.

4. It is recommended that in-service education programs be developed and utilized to educate personnel within state divisions of vocational education in the use of information dissemination systems, especially those personnel upon whom state directors rely for information related to substantive problems.

5. It is recommended that information agencies expect major utilization of indexes, bibliographies, and substantive reviews by personnel other than the state director of vocational education.

6. It is recommended that a national selective dissemination of information service be offered state directors of vocational education to provide information on problems related to administrative leadership, finance, and educational change.

7. It is recommended that states provide information services to state directors through the research coordination unit, state department of education research office, or some other easily accessible agency.

8. It is recommended that a list of consultants with their fields of expertise be developed so state directors might systematically select personal information sources to help resolve critical problems.

9. It is recommended that critical problems identified in this study be utilized in the preparation of leadership personnel for vocational education.

Additional areas of research have been suggested by this study. Some of the more important of these areas are:

1. Research of the same type as this study to determine the critical information needs and factors influencing the utilization of information of teachers of vocational and technical education

2. Research to determine the more useful information products with various target audiences in vocational and technical education

3. Evaluative studies of information dissemination systems and products to determine how they might more nearly meet user needs

4. Research to relate critical problems identified in this study to existing job descriptions and task inventories of state directors of vocational education

5. Research on staffing patterns and roles and responsibilities of personnel under the supervision of the state directors of vocational education

6. Research to follow up specific products designed for utilization by target groups, such as state directors of vocational education

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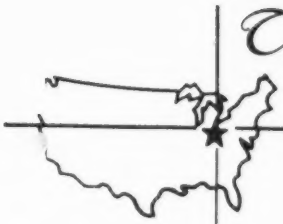
APPENDIX A

MAIL QUESTIONNAIRE



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January 29, 1971

The enclosed questionnaire is designed to provide data for The Center study on "Information Needs of State Administrators of Vocational and Technical Education." We appreciate your willingness to participate in this study.

I am requesting that you take the following action:

1. Fill out the questionnaire, following instructions contained within it.

2. Place the completed questionnaire in the envelope provided and mail it to me.

No individual responses or states will be revealed in the report of this study.

Cordially,

J. David McCracken
Information Specialist

JDM:kk

Enclosure

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THE CENTER FOR VOCATIONAL AND TECHNICAL EDUCATION

INFORMATION NEEDS OF STATE ADMINISTRATORS OF
VOCATIONAL-TECHNICAL EDUCATION

Questionnaire

Directions: Please complete the questions with a check mark (✓) on the appropriate line or with a written answer. Answers will be kept in the strictest confidence and be used only in the tabulation of group data analysis.

1. What amount of professional preparation (post high school) have you completed?

   Number of years . . . . . _____

2. Have you had graduate training within the last five years?

   Yes _____ No _____

3. What is your age?

   29 years or less . . . . . _____
   30-39 years . . . . . _____
   40-49 years . . . . . _____
   50-59 years . . . . . _____
   60 or more years . . . . . _____

4. How long have you worked at a state level of vocational-technical education?

   1-5 years . . . . . _____
   6-10 years . . . . . _____
   11-15 years . . . . . _____
   16 or more years . . . . . _____

5. Rank order (1 as high) each type of person who works for you and whom you use to seek information.

   Information Specialist (a professional nonsubstantive assistant that helps gather information such as the librarian, the RCU director, etc.) . . . . . _____
   Substantive Personnel (assistant directors, supervisors, etc.) . . . . . _____
   Technical/clerical . . . . . _____

6. Approximate the frequency of use per month for each type of group which does not work for you but with which you interact to seek information.

State superintendent and board . . . . . _____
State deputy or associate commissioner . . . . . _____
Peer group in state . . . . . _____
Peer group outside of state . . . . . _____
Clientele . . . . . _____
Advisory council . . . . . _____
Business/industry . . . . . _____

7. Approximate the frequency of use per month of information agencies you use to seek information for solving problems.

The Center for Vocational and
Technical Education . . . . . _____
Educational Resources Information
Center (ERIC) . . . . . _____
National Technical Information Service (NTIS)
or formerly known as CFSTI . . . . . _____
School Research Information Service (SRIS) . . . . . _____
University Microfilms - DATRIX . . . . . _____
Other (please specify) _____

8. Approximate the frequency of use per month of state and federal institutions you use to seek information for decision-making.

Colleges and universities . . . . . _____
Office of Research in State Department of Education . . . _____
Regional planning commissions . . . . . _____
State Planning Office or Development Board . . . . . _____
U.S. Department of Commerce . . . . . _____
U.S. Department of Labor . . . . . _____
USOE or Regional USOE Offices . . . . . _____
Other (please specify) _____

9. Identify each print media that you use in terms of closeness of availability and frequency of referral.

FREQUENCY OF REFERRAL

1 - Constant
2 - Often
3 - Upon occasion
4 - Never

	FREQUENCY OF REFERRAL
Periodicals	
American Vocational Journal	_____
Industrial Arts and Vocational Education	_____
Manpower	_____
The Occupational Outlook Quarterly	_____
Monographs of The Center for Vocational and Technical Education	
Reports of Research Projects	_____
Conference and Workshop Reports	_____
Bibliographic Series	_____
Review and Synthesis of Research	_____
Indexing and Abstracting Services	
Abstracts of Instructional Materials (AIM)	_____
Abstracts of Research Materials (ARM)	_____
Current Index to Journals in Education (CIJE)	_____
Dissertation Abstracts	_____
Education Index	_____
Psychological Abstracts	_____
Research in Education (RIE)	_____
Other (please specify)	_____

10. In what major problem areas do you have difficulty locating sufficient substantive information?

_____

_____

_____

_____

_____

11. Check the school/s your State Division of Vocational Education Office serves:

Secondary schools	_____
Post-secondary schools	_____
Adult vocational schools	_____

12. What is the approximate student population that your office serves:

Secondary school population	_____
Post-secondary school population	_____
Adult school population	_____

APPENDIX B

TELEPHONE INTERVIEW SCHEDULE

The Center for Vocational and Technical Education

INFORMATION NEEDS OF STATE ADMINISTRATORS
OF VOCATIONAL-TECHNICAL EDUCATION

Telephone Interview Schedule

Directions: Record responses on the answer form. The number in parentheses on this schedule corresponds to the column number on the answer form.

Introduction

Name of Recorder:

Representing: The Center for Vocational and Technical Education

Job of Recorder:

The Study: Information Needs Study of State Administrators of Vocational and Technical Education

Overview - We are calling to determine three or less of your major professional problems, the information requirements, the resource requirements, and your methods for getting information on the problems.

We will start with a major professional problem you regard as critical.

I. State in one sentence, if possible, a (another) major professional problem/concern requiring a decision which is of concern to you this week. (1) (Coding categories on attached sheet).

II. In this problem, _____, do you as a state director need information in order to make decisions?
Yes or No

Yes (2)

What type of information? (2) (Type)

01. Case studies
02. Demographic studies (annual reports, reports of data, statistics).
03. Expert opinion (books, references, personal evaluation).
07. Experimental research
08. Historical studies
09. Similarly involved or experienced persons/states/programs
10. Simulation
11. Survey
12. Value analysis
13. Other (proposals, applications)

Do you have difficulty finding information for this problem? (asterisk in I)

What form do you use? (2) (Process)

01. Actual document (the data)
02. Summary of documents
03. Synthesis of documents
04. Review and evaluation of documents

No (2)

What process will you use to make the decision?

01. Arbitrary
02. Directive
03. Reason
04. Projection
05. Cooperative
06. Subjective
07. Recommendation
08. Political
09. Other _____

* What quantity of information will you need to make the decision? (3)

01. Minimal
02. Moderate
03. Substantial

III. In this same problem, _____,

*Approximate the total cost of your time and effort. (4) (over year, other problems considered)

01. Minimal
02. Moderate
03. Substantial

*What type of people within your vocational division will you use to get information? (5)

01. Information Specialist (a professional nonsubstantive assistant that helps gather information such as librarians, RCU directors, etc.)
02. Substantive personnel (assistant directors, supervisors, etc.)
03. Technical/clerical
04. Administrators (higher level)
05. None

*Why will you use these people? (6)

01. Accessibility
02. Low Cost
03. Familiarity of Director
04. Type of data (knowledge)
05. Quality of information (background, experience)
06. Job Responsibility
07. Understanding of Problem
08. Other (specify) _____

*What sources of materials will you use to get information? (7)

01. Bibliographies
02. Books
03. Guides
04. Indexes
05. Periodicals
06. Reports, monographs, pamphlets (soft covers) bulletins
07. Transparencies
08. Filmstrips
09. Charts
10. Other (specify) _____.

*Why will you use these sources of materials to get information? (8)

01. Accessibility
02. Low cost
03. Familiarity
04. Type of data
05. Quality of information
06. Current
07. Availability (limited)
08. Other (specify)_____.

IV. Again in this problem, _____ which method will provide the information with the most impact? (9) (How)

01. Case study
02. Consult--individuals and groups within and outside of vocational education division
03. Correspond
04. Delegate
05. Experiment
06. Files
07. Interview--visitation situation
08. Information Agency--outside, private
09. Survey
10. Retrieval Indexes
11. Telephone
12. Advisory Council
13. Business, industry
14. Other (specify) (look at 6 on mail ques.) _____.

*How often during the past year did you use this method? (10)

01. Occasionally
02. Often/frequently
03. Constantly

. . . .Begin Again.

(when telephone interview is completed, ask for next appointment time.)

APPENDIX C

LISTING OF PROBLEMS OF THE STUDY SAMPLE

MAJOR PROFESSIONAL PROBLEMS OF
STATE DIRECTORS OF VOCATIONAL EDUCATION

(Some problems that would reveal the state or participant were deleted.)

1.0 Educational Change

1.1 Federal influence

1. Restructuring the state's teacher education program on the basis of Congressional Law 90-576.
2. Wage freeze affects relationships of vocational-technical education teachers.
3. Awaiting position of president and supreme court in regard to consolidation of schools and its implication on financing.

1.2 State and local pressures (proposals)

1. Reacting to one school redesigning program course offerings.
2. Location of regional vocational-technical centers (1/21/71 expansion).
3. To give advice to groups of people who are creating new boards for proprietor schools and cosmetology; results of recent legislation.
4. Review program proposals for spending $1.2 million dollar federal funds.
5. Hearings of local district proposals before submitting to state board.
6. Accurate review of federal proposals for funds in vocational-technical education submitted by local schools.
7. Review applications to decide if another area school should be established.
8. Submit recommendations on proposals from selected school districts for area vocational secondary schools.
9. Responding to outside consultants (Model Cities Agency) on how allocation decisions are made for model cities.
10. Evaluate a proposal for relocation of a city's vocational center.

1.3 Administrators effecting change

1. Proposing a restructure program (remedial vocational education).

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2. Defining role of vocational-technical institutes newly proposed community college.
3. Determine where to locate vocational-technical centers as part of a comprehensive high school program.
4. Planning cooperative vocational-technical programs among distant school districts and host districts.
5. Proposal for the establishment of regional vocational-technical centers as part of comprehensive high school.
6. Proposal for funding concern integrated vocational programs in academic curriculum.
7. Interpreting the effects on the state of utilizing private schools (vocational-technical) on a contract basis.
8. Writing a law for one of the senators to improve vocational education, particularly integrating vocational education in K-12 curriculum.
9. Instituting new procedures for reimbursement of local schools in agriculture.
10. Develop an awareness of the world of work in elementary school children.
11. Planning for the utilization of TV as a medium for a statewide public information program.
12. Promote the certification and approval of vocational programs in the private schools.
13. The possible use of mobile classrooms for occupational training to students in high schools at low cost.
14. Develop a position paper on restoring federal funds for vocational education recently withdrawn by the federal government.
15. Preparation of Program View for use by guidance counselors in rural schools and coupling of funds to implement.
16. Pending federal bill, being contradictory to vocational education, needs counteraction by state people and proposed alternative needs developed.
17. Funding for an occupational information program using extensive hardware for use in small school systems.
18. Design regulations on correspondence schools outside of state that are after veteran benefit money.
19. What is the role of private schools in providing vocational education to secondary and/or post-secondary students?
20. Coordination of regional vocational-technical centers and vocational-technical institutes.

1.4 Communication

1. Improving methods of communication between staff and schools so as to standardize information.
2. Communication with lay public concerning vocational-technical education by hiring specialized staff person versed in communication.
3. Reoccurring problem from 1/25/71: hiring staff person with background in communication to handle communication with lay public concerning vocational-technical education.
4. Determine what are best methods of communications to professional staff and field personnel.
5. Establish position to improve communications between supervisory staff and advisory council.
6. Better coordination between regional vocational centers and vocational-technical institute level.

1.5 Problem-oriented research

1. Processing of proposal to SUOE for developing model career system (vocational counseling).
2. Calculate the federal fund reimbursements and select proposals.
3. Reviewing the proposals for funding under the state occupational unit funding law.
4. Need the effect the vocational program has on the dropout rate (no accurate data available).
5. Determine how to spend federal research money most effectively.
6. Preparing to defend the value of vocational education research.
7. Writing magazine articles on evaluation (self and programs) and action research for teachers.
8. Feasibility study on regional area vocational schools.
9. Presentation of paper to conference on "Opinion Leadership."
10. Feasibility study to determine geographic location of regional vocational-technical centers in state.
11. Continue work on magazine articles on action research and teacher evaluation.

2.0 Teachers

2.1 Teacher organizations

1. Restructuring the state vocational associations that are currently a consolidation of all vocational organizations.

2.2 Teacher preparation

1. Develop guidelines for better communication between state staff and university teacher-training staff.
2. Reviewing the EPDA Part I supplement to the state plan--in-service teacher education and teacher education.

2.3 Negotiation laws

1. Resolving labor problem between teachers and state board by negotiation.

2.4 Certification, recruitment, in-service education, supervision

1. Preparing for and conducting a conference on elementary and vocational guidance.
2. Vocational-technical teacher certification revision.
3. Recommending new certification guidelines and standards for secondary trade and industrial instructors.
4. Present new certification pattern to licensing commission.
5. Continuing employment of problem teachers.
6. Hiring of new director, assistant director, and one other staff person for post-secondary vocational-technical institutes.
7. Coordinate staff efforts for in-service workshop on minimum standards of teacher performance in occupational programing.
8. Arrange and conduct a fall series of vocational conferences for every vocational educator in the state.
9. Recommend salary changes for administrators and justification for presentation to interim committee.
10. Coordinate a state conference on all areas of concern in vocational education.
11. Coordination of a conference on career education for all vocational education and administration in-service training.
12. Prepare for three hearings in regard to vocational-technical personnel problems in area vocational schools.
13. Assisting local district in staffing.
14. Developing teacher education programs for trade and industrial in-service training in cooperation with technical institutes in state.
15. More clearly define the supervisory roles and develop guidelines for supervisors to improve the supervisory effort.

3.0 Instruction

3.1 Personnel

1. Planning workshops for staff on finance and reimbursement.
2. In-service education for state department and statewide staff, specifically in area of curriculum.
3. In-service workshop with staff concerning difference between consultants, supervisors, and administration process.
4. Verifying and developing administrative organization procedures to be used in area vocational centers.

3.2 Curriculum

1. Developing teacher guides for prevocational education.
2. Proposal for training child care workers per governor's request to expand child care centers.
3. Consideration to purchase of materials on occupational counseling for statewide service.
4. Defining the role identification of the community colleges in vocational education curriculum.
5. Establishing behavioral objectives for basis of development of individualized curriculum materials; proposal form.
6. Reviewing outcomes of curriculum team, overhauling agricultural curriculum.
7. How to approach the development of a teaching guide in the textile area.

3.3 Evaluation

1. Data analysis of selected tables on teacher evaluation.

3.4 In-service education

1. In-servicing the instructional needs of public service agencies.

4.0 Administrative Leadership

4.1 Board - superintendent

1. Defining role and function of vocational-technical education to the state commissioner.

2. Position paper on technical and community college post-secondary programs for state supervisor of public instruction.
3. Prepare position paper for state superintendent on-of-and sharing of funds and the effect on the state.
4. Submit recommendations to governor for state advisory committee members.
5. Furnish data to state planning agency and governor on reasons why state does not want to participate in a multi-state regional residential manpower center.
6. Inform and discuss in forthcoming committee of chief school officer, chairman of board, and chairman of advisory council on state plan for 1972.
7. Combat state superintendent's request for two percent patronage of all employees.
8. Rewrite amendments to state plan for coming board meeting.
9. To get state plan signed by governor and attorney general.
10. Make plans for annual governor's conference.
11. Prepare presentation for state superintendent's annual conference-concentration on five-year objectives.
12. Revise, update, refine materials for governor's conference.

4.2 Community and human relations

1. Collecting adequate information on student career problems in the city and propose how solved through vocational-technical education.
2. Personnel conflict at vocational-technical institute.
3. Offer bid to AVA to hold convention.
4. Planning and hosting nation OEA contests.
5. Determine the possibilities of facilities recently acquired from a private firm as a residential area school.
6. Coordinate vocational adult education training opportunities with activities of state Economic Development Agency in effort to attract new industry.
7. Devise methods for a more effective communication system in the state department with all types of people.
8. Improve communications and relationships with state advisory council.
9. Conflict in information concerning needs of convention.

10. Call people decided by state board to discuss vocational education; board members and advisory council members.
11. Give advice about administration of private schools.

4.3 Administrative organization

1. Decide how to handle governor's request to have vocational-technical office act administratively for Office of Economic Opportunity.
2. Division move without break in operation.
3. Advising and determining ways and means that vocational-technical division will participate in development of comprehensive research program for department of education.
4. Convince the budget agency that more telephones needed and appropriated in budget.
5. Define the scope of responsibilities of vocational staff.
6. Reorganization of the Bureau of Vocational Education.
7. Draft copy on reorganization to be presented to commissioner.
8. Working with the state department of education on the federal programs by representing vocational-technical education to coordinate administrative procedures.
9. Member of committee to reorganize state department of education, set goals, establish functions, etc.
10. Reorganization of vocational division.
11. Communication and organization within changing structure of state department.
12. Plan for restructuring the fiscal procedures in vocational division such as reporting ordering, etc.
13. Combat new state superintendent's proposal to transfer Chief Superintendent of Vocational Education to structure of "Consultants of Instructional Area."
14. Continue work on reorganizing vocational education in state department; writing job descriptions and pulling together information.
15. Reorganization.
16. Reorganization of state department of education as to functions and regrouping of administrative units.
17. Move office in a reorganizational change.
18. Reorganization of state department; assemble information from consultants and write new positions for Bureau of Vocational and Adult Education.

19. Function of persons; review and digest proposal for new organization from state superintendent.
20. Writing job descriptions for new organizational chart; directive received.
21. Reorganization of Bureau of Education; in process of making changes.
22. Restructuring of the educational organization by combining the college and vocational education divisions.
23. Review and evaluate proposals from governor's office consolidating all manpower agencies into one central agency.
24. Reorganization of state system.

4.4 Decision-making

1. Financial management of administrative costs--presently, consulting.
2. Determine a position for a contractual arrangement with private schools for a few vocational-technical students.
3. Establishing standards for vocational-technical education programs to recommend to state board for approval.
4. Deciding the content for a state policy handbook to operate in conjunction with the state plan.
5. Find ways and means to meet governor's budget message on economy.
6. Development of list of priorities for building vocational facilities in state.
7. Decide participant list and reactors for Secretary's Regional Fact Finding Conference on Vocational Education.
8. Selection of education professional development candidate.
9. Appointment of advisory council member.
10. Decisions on initial distribution of budget for state plan for vocational education for 1972.
11. Determine a fair ratio to recommend to state superintendent and board for programs at secondary and post-secondary level.
12. Decisions concerning foundation grants and programs for construction of another area vocational school
13. Decisions as to where to support the various kinds of new federal legislation.
14. Decision as to placement of RCU--at university or state department of education.
15. Cut out a center in area that could be served by two instead of three.
16. Review decision of staff not to qualify an individual school district for area vocational center.

17. Decision as to what percent of time of supervisory personnel and travel money can be given to out-of-state travel.
18. To develop criteria to determine location of secondary and post-secondary area vocational schools.
19. Developing policies for dispersement of student produced materials resulting from manpower training.
20. Feasibility study for the location of regional vocational centers.

4.5 Program evaluation

1. Evaluation of all vocational education programs in state.
2. Review and evaluation of 1970 state plan activities prepared by state advisory council and state board of education; then submitted to USOE.
3. Need evaluation of teacher education and qualification for future revision.
4. Evaluation of relationship of occupational division and staff to overall objectives.
5. Write contract for research firm to study vocational education in state.
6. Restructuring the vocational information system from collecting at local school level to analyzing school data.
7. To revise the reporting system to avoid duplication.
8. Arrange to provide information on state statistics of private and public schools to NCES.
9. Supply information and help staff assemble accurate information to plan and evaluate division study of department of education.

4.6 Staff

1. Design a salary schedule for staff that is competitive.
2. Evaluate staff assignments in relation to job needs.
3. Evaluation of staff positions and efficiency.
4. Develop job description and philosophy for new staff working with handicapped and disadvantaged programs.
5. Evaluation and reorganization of responsibilities and functions of staff in division of occupational education.
6. Evaluating a request to fire professional employee by immediate superior.
7. Evaluating report of management group, under contract, reviewing efficient use of secretaries.

8. Assisting another state division to re-draft qualifications for a consultant in vocational counseling services.
9. Alternatives to hiring professional replacements during present personnel freeze.
10. Evaluation of state staff personnel by personal interview.
11. Reduction in state budget by legislature causing need to adjust budget for staff within the department.
12. Assessment of a particular secretary and her supervisor's interaction.
13. Rehandling supervisor's poorly made decisions in regard to guidance in-service workshop.
14. Adjust staff according to cut in funds.
15. Organizing staff to secure adequate data for part two and three of state plan for vocational education.
16. Report on recent state director's meeting in Washington, D.C., to division staff.
17. Serve a leading role in three-day workshop of all state staff--workshop on plan and evaluation.
18. Report the personnel funded under fiscal 1971 monies and those recommended for 1972 to superior.
19. Need sufficient staff to meet mission and scope of state department.
20. Hiring new director for vocational-technical institute.
21. Hiring of two new secretaries.
22. Filling two or three new positions--assistant directorship and director of post-secondary vocational-technical institute.
23. To plan for staff retreat.
24. Selection of director of post-secondary school; reviewing applications.
25. Staff vacancy--assistant director.
26. Need a staff replacement--assistant director.
27. Staff reorganization.
28. Reorganization of staff--writing job descriptions.
29. Demonstrate need for person to replace assistant director in light of budget cuts.
30. Rewriting job descriptions of entire vocational-technical staff.

4.7 Program planning

1. State plan for 1972 for vocational-technical education.
2. Collecting data for projecting occupational training needs for justification of funds.

3. Planning for next year's vocational-technical program.
4. Long-range plan for program development and finance of vocational-technical education in the state's largest city.
5. Preparing materials to present to state board of education based on twelve recommendations of advisory council.
6. Condense the annual and long-range plan to meaningful document that can be understood.
7. Projecting needs for development of state plan for 1972.
8. Establishing a state plan of priorities for fiscal year 1972 for development of state plan for vocational education.
9. Developing state plan for allocation of federal funds.
10. Plans for retraining employees of newly closed naval depot in Indiana.
11. Establishing behavioral objectives as a process for program planning.
12. Developing state regulations for private vocational schools in form of proposal for public hearing and presentation to state board; presently a conference of directors of major schools.
13. Determining methods for assembling information and developing a state plan for educational personnel development.
14. Finalizing state plan for public hearing--projections.
15. Informal hearings with each officer in vocational division on unit work plans and budget projections for 1972.
16. Making changes in state plan with state board in preparation to meeting with advisory council.
17. Development of state plan by group interaction in a process of futures for casting.
18. Completion of the writing of the state plan for USOE by June 1.
19. The preparation of a report for the vocational division that provides for objectives, planned improvements, and areas of concern.
20. Continuation on state plan with development of annual plan for 1972.
21. Alterations and revisions of state plan public hearing with state board, advisory council, and state staff.
22. Getting an acceptable order to state plan.
23. Finalizing the part of state plan that deals with administration of the area vocational centers.

24. Last board meeting in regard to state plan; changes made on basis of recommendations.
25. To determine the direction of vocational education in the next few years for a local county school.
26. Final review of state plan before printing and public hearing on July 3.
27. Develop EPDA state plan for public hearing.
28. Following recommendations of advisory council on completion of state plan for vocational-technical education.
29. Revising state plan per recommendations of regional office.
30. Coordination with federal and regional levels on state plan to get approval.
31. Help develop a total long-range plan for elementary, secondary, and continuing education in the state for all of education.
32. Assisting in developing a mission statement for state department and goals for vocational-technical division.
33. Securing support for establishing priorities on state plan as funds become available.
34. Developing mission statement for department of education.
35. Design plans for career education--grant from USOE.
36. Review of state plan for 1972 fiscal year in regard to reductions in research monies and evaluate staff proposals.
37. Develop a data base for program planning and reporting--verify system or contract.

5.0 Major Social Issues

5.1 Cultural deprivation (disadvantaged)

1. Evaluate program proposal form and approve funds for workshop for office and distributive education coordinators and administrators of disadvantaged youth in urban areas.
2. Allotment of federal funds for disadvantaged.
3. Draft a statewide contract to administer national youth council program for disadvantaged students, run by state department.
4. Reevaluation of budgets for disadvantaged program for next fiscal year; member of committee.
5. Budgeting for disadvantaged and handicapped resulting from increased responsibility and funding.
6. Identity of special needs programs with coding for the occupational training.

5.2 Image of vocational education

1. Position of vocational-technical schools in relation to academic junior colleges.
2. Preparing document for governor's manpower advisory committee. "What Vocational Education Does as it Relates to Manpower Training."
3. Updating twenty-page brochure.

5.3 Ecology

1. Developing innovative vocational-technical program on ecological and environmental subjects.
2. Share in decision-making on governor's conference in vocational education and ecology (environment and emerging occupations).

6.0 Finance

6.1 Legislative control

1. Justification to legislature for area post-secondary vocational-technical school.
2. Funding of industrial arts programs at prevocational level by legislature.
3. Funding by legislature for expansion of trade and industrial programs at secondary level.
4. Presenting to legislature data for funding requests of total vocational education program.
5. Proposing money needs for vocational-technical programs before general assembly.
6. Propose vocational-technical budget for Ways and Means Committee.
7. Answer questions of legislators in regard to budget support for jobs shown on placement structure.
8. Reviewing bills for the legislature and designing one bill on all areas of vocational education, particularly finance.
9. Review with legislator what is happening in occupational guidance.
10. Present materials to subcommittee on education that include the accomplishments in vocational-technical education generally since 1968 amendments.
11. Promoting a campaign for increased state funds.
12. Justify location of an area vocational-technical school to legislature.
13. Restore funds from $1 million to $3 million for vocational-technical education as formerly approved by governor.
14. Prepare a case to Senate Appropriations Committee on need for $3 million budget for vocational education.

15. Preparing for appearance before Ways and Means Committee asking funds in vocational education.
16. Prepare testimony for six subcommittees of legislature on all areas of vocational-technical education and post-secondary vocational-technical education.
17. Legislature concerns--at present, compiling background information on budget approximations and tuition bills.
18. State legislature board, by state appropriations measure, has cut funds and programs in vocational education.
19. Appearing before budget committee for vocational bill requiring match of federal and state funds.
20. Defending proposal for monies for area vocational schools, salary adjustments of those teachers (post-secondary), etc.
21. Prepare financial proposal to general assembly hearing.
22. Prepare information for testimony to education subcommittee on use of 1968 federal amendment appropriations.
23. Awaiting appropriation of funds by state legislature.
24. Special session of state legislature and budget work must be resubmitted.
25. In process of rewriting legislation affecting vocational education (defining area vocational schools, describing administration and funding processes, etc.).
26. Defending bills before legislature that deal with vocational education, both secondary and post-secondary.
27. Justification report of monies used from Vocational Education Amendments Act 1963 and 1968 with recommendations to congressmen, House subcommittee.
28. Reevaluation of proposal for state funding so as to present at next legislative session; result of governor's veto.
29. Preparing material for congressman's committee on needs, change in legislation, appropriations, early funding, etc.
30. Reply to request of state representative needing information for hearings in Washington on activities in varied areas of vocational education since 1968 amendment.
31. Preparing testimony for hearing before house subcommittee on education in state legislature.
32. Budget justification of monies and services; state legislature still in special session.
33. Legislation in special session and no appropriations.

34. Prepare statement of testimony for a congressman (Committee on Education in U.S. Congress) to describe vocational programs.
35. Work cooperatively with state department of education and state legislature to restore funds cut by governor.
36. Preparing next year's budget request for the general assembly.
37. Meet senator's request for information on greatest needs, weaknesses, defense of budget request.
38. Special session of legislature.
39. Legislature in special session; governor vetoes school appropriations, schools will submit budgets on October 15; state director developing alternatives.
40. Legislature in special session and have committed funds for this year and next.
41. Provide information and recommendations for education committee hearings and appropriations hearings to be held first week of January.

6.2 Federal and state aid (receiving)

1. Working with congressional delegation in acquiring surplus equipment; need USOE to help by taking active role.
2. Prepare for next board meeting in regard to federal funding.
3. Developing a budget for manpower programs in state.
4. Federal financing June board meeting with review of forty proposals.
5. Review and development of federal budget for manpower training.
6. Concerns of federal budgets--clearing up 1971, 1972 and initial draft of 1972, 1973 budget.
7. Verify the *Congressional Record* on intent of Congress to cut research monies.
8. Cut in research funds by USOE for state.
9. Reviewing "Equipment Utilization Requests" for processing of excess properties.
10. Preliminary work relative to establishing a state system for handling excess government property.
11. Budget development for 1972-1973 fiscal year.
12. Prepare annual descriptive report for USOE for fiscal 1971.
13. Strained relationships with USOE for spending states' research money.
14. Develop most efficient procedures to obtain excess property from the government.
15. Budget for 1972-1973 vocational-technical education division as part of total budget for department of education.

6.3 Community control

1. State superintendent and supervisor of vocational education have repealed monies for a district that needs a hearing and review of budget cut.
2. Present materials concerning the ensuing year to administrators' conference (information; new procedures).

6.4 State and federal aid (distribution within state)

1. Find new method of reimbursement of vocational-technical program in state.
2. Determine exact reimbursement of federal funds to local districts.
3. Reporting of federal reimbursement on the report forms which are confusing, etc.
4. Funding decisions in regard to construction plans of fifteen area vocational centers.
5. Developing criteria for allocating new state aid funds under new formula.
6. Designing form for reimbursement requests and program offerings.
7. Determine what is wrong with financial reporting system.
8. Collecting information and studying with joint committee (vocational-technical and higher education) on allocation of funds for higher education.
9. Dry run of applying reimbursement formula.
10. Allocation of state funds to local districts for differing districts for differing vocational purposes.
11. Budget review for secondary and post-secondary schools without verification from legislature and federal congress.
12. Decisions related to budgets and finance appropriations bill for the coming fiscal year.
13. Preparing the five-year state plan for vocational education.
14. Unexpected money causing redistribution of 1972 federal budget for state plan.
15. Trying to establish a tentative budget not knowing state or federal appropriations.
16. Determining the formula for distribution of state and federal funds for vocational education.
17. Rewrite state plan for state funds.
18. Procedures for handling fifteen percent cut in last quarter's state budget.
19. Allocation of resources on basis of legislative allotment.
20. Limited amount of construction money to get best results.

21. Review of allocation of funds for 1971 year.
22. Budget being put together and decisions needed on reimbursement.
23. Allocation of federal and state funds to various sections in vocational education for next year.
24. Allocation of federal monies--carry over of funds.
25. Make budget revisions for new salary schedule, all day classes and trade and evening classes.
26. Decisions on recommendations for allocation of legislative money appropriated for leadership of youth groups.
27. Preparation of budget for fiscal year 1973 for legislative sessions.
28. Review of distribution of funds to local education agencies with staff.
29. Reviewing applications and program narratives of school districts for administrative state and federal funds.
30. Allocation of funds to major cities (large urban areas).

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